EUROPEAN CURRICULUM VITAE FORMAT

PROF. DR. RADE HAJDIN

LIST OF CONTENTS

PERSONAL INFORMATION

Name	**HAJDIN, RADE**
Address	**SONNENBERGSTRASSE 12, CH-8032 ZÜRICH, SWITZERLAND**
Office	**Infrastructure Management Consultants (IMC) GmbH** **Bellerivestrasse 209, 8008 Zurich, Switzerland**
Telephone	**+41-43-497 95 20**
Fax	**+41-43-497 95 22**
Business E-mail	**Rade.Hajdin@imc-ch.com**

Nationality	Swiss
Date of birth	15.04.1961

WORK EXPERIENCE

• Dates (from – to)	**FROM 01.02.2016**
• Name and address of employer	Faculty of Civil Engineering, University of Belgrade, Bulevar kralja Aleksandra 73, 11000 Belgrade, Serbia
• Type of business or sector	University
• Occupation or position held	Professor – 50% position
• Main activities and responsibilities	Ph. D. Mentoring, Research, Lecturing
• Dates (from – to)	**FROM 01.09.2003**
• Name and address of employer	Infrastructure Management Consultants (IMC) GmbH, Signaustrasse 14, 8008 Zurich, Switzerland
• Type of business or sector	Consulting, Research
• Occupation or position held	President, Founder
• Main activities and responsibilities	Consulting, Research, Technical Auditing, Requirements Management, Software Engineering,
• Dates (from – to)	**FROM 01.06.2010 TO 30.04.2015**
• Name and address of employer	Faculty of Civil Engineering, University of Belgrade, Bulevar kralja Aleksandra 73, 11000 Belgrade, Serbia
• Type of business or sector	University
• Occupation or position held	Asscociate Professor
• Main activities and responsibilities	Ph. D. Mentoring, Research, Lecturing
• Dates (from – to)	**FROM 01.09.2001 TO 30.06.2003**
• Name and address of employer	University of Pennsylvania, Department of Electrical and Systems Engineering, 220 South 33rd Street, Philadelphia, PA-19104, USA.
• Type of business or sector	University
• Occupation or position held	Visiting Associate Professor
• Main activities and responsibilities	Lecturing, Research and Consulting

• Dates (from – to)	**FROM 01.05.1997 TO 31.08.2001**
• Name and address of employer	Laboratory of Maintenance and Safety of Structures (MCS), Swiss Federal Institute of Technology at Lausanne, 1015 Lausanne, Switzerland.
• Type of business or sector	University
• Occupation or position held	Senior Research Associate – 20% position
• Main activities and responsibilities	Research, Mentoring
• Dates (from – to)	**FROM 01.03.1994 TO 31.08.2001**
• Name and address of employer	Dr. J. Grob & Partner AG, Technikumstrasse 72, 8400 Winterthur, Switzerland.
• Type of business or sector	Consulting
• Occupation or position held	Vice President, Co-Founder – From 1.5.1997 80% position
• Main activities and responsibilities	Consulting, Structural Design, Requirements Management, Software Engineering
• Dates (from – to)	**FROM 01.01.1991 TO 28.02.1994**
• Name and address of employer	Emch+Berger AG Winterthur
• Type of business or sector	Consulting
• Occupation or position held	Structural Engineer, Deputy Manager
• Main activities and responsibilities	Structural Design, Software Engineering
• Dates (from – to)	**FROM 01.10.1984 TO 31.05.1990**
• Name and address of employer	Institute for Structural Engineering (IBK), Swiss Federal Institute of Technology at Zurich
• Type of business or sector	University
• Occupation or position held	Research Assistant. Ph. D. Student
• Main activities and responsibilities	Research, Teaching, Consulting

EDUCATION AND TRAINING

• Dates (from – to)	**1984 - 1990**
• Name and type of organisation providing education and training	Department of Civil Engineering Swiss Federal Institute of Technology at Zurich
• Principal subjects/occupational skills covered	Structural Engineering
• Title of qualification awarded	Ph. D.
• Dates (from – to)	**1979 - 1984**
• Name and type of organisation providing education and training	Faculty of Civil Engineering University of Belgrade
• Principal subjects/occupational skills covered	Structural Engineering
• Title of qualification awarded	M. Sc. – Magna cum laude

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE **SERBIAN**

OTHER LANGUAGES	**GERMAN**	**ENGLISH**	**FRENCH**	**RUSSIAN**
• Reading skills	Excellent	Excellent	Good	Basic
• Writing skills	Excellent	Excellent	Basic	None
• Verbal skills	Excellent	Excellent	Basic	None

ORGANIZATIONAL SKILLS AND COMPETENCES

Management, Administration and Coordination of large structural engineering and software engineering projects. The projects are listed in this CV in following chapters.

TECHNICAL SKILLS AND COMPETENCES

Software Engineering tools:
UML (Unified Modeling Language) proficiency level (Formal visual language for Software Analysis and Design)
ERD (Entity Relationship Diagramming) – proficiency level (Formal visual method for data modeling)
Programming languages:
Fortran – proficiency level, Pascal – proficiency level, C++ - intermediate level,

AWARDS

• Date	1984
• Award	Reward for the best Diploma project (October reward)
• Name of awarding organization	City of Belgrade
• Date	1977
• Award	Winner of competition in physics of Republic of Serbia
• Name of awarding organization	Republic of Serbia

ACTIVITIES IN PROFESSIONAL AND ACADEMIC SOCIETIES

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- **SIA** (Society of Swiss Engineers and Architects) – Member since 1991
- **IABSE** (International Association for Bridge and Structural Engineering) – Member since 1991
- **VSS** (Association of Swiss Road and Traffic Engineers) – Member since 1995
- **SI** (Swiss Informatics Society) – Member from 1995 to 2001
- **ASCE** (American Society of Civil Engineers) – Member since 1997
- **IEEE** (Institute of Electrical and Electronic Engineers) **Software Society** – Member since 2000
- **TRB** (Transportation Research Board of National Academies, USA) – Member since 2002
- **IABMAS** (International Association for Bridge Maintenance and Safety) – Member since 2002
- **EuroStruct (**European Association for Quality Control of Bridges and Structures) – Member of Executive Committee since 2017

TECHNICAL COMMITTEES

- **SIA** (Society of Swiss Engineers and Architects) Working Group 162/3 “Fatigue of Concrete Structures”– Member 1992 - 1997
- **SIA** (Society of Swiss Engineers and Architects) Code Committee 169 “Preservation of Structures” – Member and administrator 1992 - 1997
- **SI** (Swiss Informatics Society) Working Group on Object Oriented Software Development – Member 1996 – 2001
- **IABSE** (International Association for Bridge and Structural Engineering) Working Commission 6 “Information Technology” – Member 1997-2005
- **IABSE** (International Association for Bridge and Structural Engineering) Commission 5 “Preservation and Forensics” – Chair since 2017
- **VSS** (Association of Swiss Road and Traffic Engineers) Expert Committee EK 7.03 “Information Systems”– Member since 1998; Vice chair 1998-2001
- **ASCE** (American Society of Civil Engineers) Subcommittee on Bridge Management, Inspection and Rehabilitation – Control member 2002 - 2008
- **IABMAS** (International Association for Bridge Maintenance and Safety) Committee on Bridge Management – Member since 2002
- **TRB (**Transportation Research Board of National Academies, USA) AHD35 Committee on Bridge Management – Member 2003 – 2015
- **TRB (**Transportation Research Board of National Academies, USA) AHD30 Committee on Structure Maintenance – Member since 2016
- **VSS** (Association of Swiss Road and Traffic Engineers) Expert Committee EK 7.09 “Asset Management”– Member 2003 - 2010
- **VSS** (Association of Swiss Road and Traffic Engineers) Expert Committee EK 7.07 “Road Structures Management”– Member since 2003; Chair 2008 – 2010

- **VSS** (Association of Swiss Road and Traffic Engineers) Technical Committee 7 "Preservation Management"– Member 2008 – 2010; Chair 2010 – 2014
- **ISO TC 251** "Asset Management", Member of Swiss Mirror Committee, 2011 -
- **VSS** (Association of Swiss Road and Traffic Engineers) Technical Committee 4 "Civil and Geotechnical Engineering", Chair 2014 –
- **WRA** (World Roads Association), Working Group D1.3 "Innovations in Asset Management", Chair 2016 -

SCIENTIFIC COMMITTEES FOR INTERNATIONAL CONFERENCES

- IABSE Conference, Toward a Resilient Built Environment, Guimaraes, Portugal, March 27-29, 2019
- Ninth International Conference on Bridge Maintenance, Safety and Management (IABMAS'18), Melbourne, July 9 – 13, 2018
- IABSE Conference, Engineering the Past, to meet the needs of the Future, June 25-27, 2018, Lyngby, Denmark
- Eleventh International Bridge and Structures Management Conference, April 26-27, 2017, Mesa, Arizona.
- Eight International Conference on Bridge Maintenance, Safety and Management (IABMAS'16), Foz do Iguaçu, June 26 – 30, 2016.
- Seventh International Conference on Bridge Maintenance, Safety and Management (IABMAS'14), Shanghai, July 7 –11, 2014.
- Sixth International Conference on Bridge Maintenance, Safety and Management (IABMAS'12), Stresa, July 8 –12, 2012.
- Fifth International Conference on Bridge Maintenance, Safety and Management (IABMAS'10), Phialdelphia, July 11 –15, 2010.
- Fourth International Conference on Bridge Maintenance, Safety and Management (IABMAS'08), Seoul, July 13 –17, 2008.
- Third International Conference on Bridge Maintenance, Safety and Management (IABMAS'06), Porto, July 16 –19, 2006.
- IABSE Conference, Operation, Maintenance and Rehabilitation of Large Infrastructure Projects, Bridges and Tunnel, Copenhagen, May 15 –17, 2006.
- Second International Conference on Bridge Maintenance, Safety and Management (IABMAS'04), Kobe, October 19 –22, 2004.
- First International Conference on Bridge Maintenance, Safety and Management (IABMAS'02), Barcelona, July 14 –17 2002

COMMITTEES OF GOVERNMENTAL AUTHORITIES

- FEDRO (Federal Roads Office) / VSS (Association of Swiss Road and Traffic Engineers) Requirements Committee for Road Management System - MISTRA
- FEDRO (Federal Roads Office) Steering Committee on Asset Management (MSE Ausschuss) – Member 1999-2001
- International Committee for Evaluation of Swiss Universities of Applied Sciences – Member 2000 - 2001

RESEARCH PROJECT REVIEW COMMITTEES

- VSS (Association of Swiss Road and Traffic Engineers) since 2005
- Ministère de l'ecologie, du développment durable et de l'energie (French Ministry of Ecology, Sustainable Developement and Energy) since 2014

EDITORIAL AND REVIEW BOARDS

- Transport, ICE journal since 2011
- Journal of Structure and Infrastructure Engineering, Review since 2010
- Member of Reviewer Pool for VSS (Association of Swiss Road and Traffic Engineers) since 2008.
- Journal of Infrastructure Systems, American Society of Civil Engineering, Reviewer since 2003.
- Journal of Bridge Engineering, American Society of Civil Engineering, Reviewer since 2001.
- Structural Engineering International, Journal of IABSE since1998
- IABSE (International Association for Bridge and Structural Engineering) Publication Committee – Member 1993-2001
- Coordinator and Chief Reviewer for two-part series on Bridge Management Systems in "Structural Engineering International", Journal of IABSE - 1998

ADVISING AND MENTORING ACTIVITIES

ADVISOR	2015 -	Faculty of Civil Engineering, University of Belgrade Ph. D. Thesis "BIM Model for inspections and deterioration" Ph. D. student: Dušan Isailović
	2015 -	Faculty of Civil Engineering, University of Belgrade Ph. D. Thesis "BIM Model for infrastructure owners" Ph. D. student: Marija Petronijević
	2010 - 2015	Faculty of Civil Engineering, University of Belgrade Ph. D. Thesis "Vulnerability of Bridges due to Scour" Ph. D. student: Nikola Tanasić
	2009 - 2014	Swiss Federal Institute of Technology at Zurich (ETHZ) Ph. D. Thesis "Scheduling of Work Zones on Highways" as external advisor Ph. D. student: Frank Schiffmann
	2006 - 2008	Swiss Federal Institute of Technology at Lausanne (EPFL) Ph. D. Thesis "The Responsive Approach: An Integrated Socially Sustainable Technically Optimal Decision Model" as external advisor Ph. D. student: James Birdsall
	2006	Swiss Federal Institute of Technology at Zurich (ETHZ) Diploma project on "Co-ordination of Maintenance Activities at Swiss Federal Railways" as industry advisor Student: Michael Lutz
	2002	Department of Electrical and Systems Engineering, University of Pennsylvania Senior Design Projects on "Terrorist Risk Assessment of Public Infrastructure"
	1997 - 2001	Swiss Federal Institute of Technology at Lausanne (EPFL) Ph. D. Thesis "A Supply and Demand Approach to Bridge Management" Ph. D. student: Bryan Adey
	1997 – 2000	Swiss Federal Institute of Technology at Lausanne (EPFL) Ph. D. Thesis "Condition Development of reinforced concrete roads bridges" Ph. D. student: Guido Roelfstra
REFEREE FOR PHD PROJECTS	2017 -	University of Minho Ph. D. Thesis "Risk-Based Railway Infrastructure Management Systems" Ph. D. student: João Nuno Duarte Fernandes
	2017 -	Swiss Federal Institute of Technology at Zurich (ETHZ) Ph. D. Thesis "A Methodology to determine optimal work programs on interrelated networks" Ph. D. student: Clemens Kielhauser
	2015	Swiss Federal Institute of Technology at Zurich (ETHZ) Ph. D. Thesis "A Methodology to determine most sustainable bridge work programs" Ph. D. student: Zanyar Mirzaei
	2014	Swiss Federal Institute of Technology at Zurich (ETHZ) Ph. D. Thesis "Scheduling of Work Zones on Highways" (preliminary title) Ph. D. student: Frank Schiffmann
	2008	Swiss Federal Institute of Technology at Lausanne (EPFL) Ph. D. Thesis "The Responsive Approach: An Integrated Socially Sustainable Technically Optimal Decision Model" Ph. D. student: James Birdsall
	2001	Swiss Federal Institute of Technology at Lausanne (EPFL) Ph. D. Thesis "A Supply and Demand Approach to Bridge Management" Ph. D. student: Bryan Adey
	2000	Swiss Federal Institute of Technology at Lausanne (EPFL) Ph. D. Thesis "Condition Development of reinforced concrete roads bridges" Ph. D. student: Guido Roelfstra
	1999	Swiss Federal Institute of Technology at Lausanne (EPFL) Ph. D. Thesis "Fatigue of reinforced concrete structures" Ph. D. student: Max Schläfli

REFEREE FOR OTHER PROJECTS	2001 – 2007	Department of Electrical and Systems Engineering, University of Pennsylvania Referee for Senior Design Projects

TEACHING ACTIVITIES

UNDERGRADUATE STUDIES	2014 – 2015	University of applied Science Bern, Preservation of Road Infrastructure - Bachelor
	2008 - 2015	Faculty of Civil Engineering, University of Belgrade Bridges - Bachelor
	2002 - 2003	Department of Electrical and Systems Engineering, University of Pennsylvania "Project Management"
	2001 – 2002	Department of Electrical and Systems Engineering, University of Pennsylvania "Optimization of Systems"
	2002	Department of Electrical and Systems Engineering, University of Pennsylvania "Structural Systems II – Dynamics"
	1989	Swiss Federal Institute of Technology at Zurich (ETHZ) "Application and Development of Stress Fields"; within the course "Plates and Shells".
GRADUATE STUDIES	2012 -	Faculty of Civil Engineering, University of Belgrade "Assessment, Preservation and Improvement of Road Structures" - Master
	2011 -	Faculty of Civil Engineering, University of Belgrade "Safety and Reliability of Structures" – Ph. D. Course
	2001 - 2003	Department of Electrical and Systems Engineering, University of Pennsylvania "Infrastructure Management"
	1990	Faculty of Civil Engineering, University of Belgrade "Application of Theory of Plasticity in Analysis of Reinforced and Pre-stressed Concrete Structures"; within the course "Theory of Plasticity".
	1988	Swiss Federal Institute of Technology at Zurich (ETHZ) "Tension Structures"; course was a part of the graduate program "Structures, Concepts and Systems"

SELECTED PROJECTS IN INDUSTRY

INFRASTRUCTURE MANAGEMENT	2017	Federal Ministry of Transport and Digital Infrastructure International benchmarking study on condition of road infrastructure – project lead Benchmark study comprised the road infrastructure of Germany, Switzerland, Austria, Netherlands, England and Oregon.
	2016	ASFINAG (Austrian motorway operator) Review and development of preservation strategy In this project the review of the existing preservation strategy and recommendation for its adaptation were elaborated on the basis of workshops and interviews.
	2015 -	Canton Uri Development and customization of an integral infrastructure management tool infFaros– project lead The integral management tool infFaros developed between 2014 and 2017 is customized and in use in canton Uri.

2012 - 2015 Canton Basle-City

Enhancement of an Integral Management Tool for Public Infrastructure with tramway infrastructure – project lead

The integral management tool developed in 2007 will be expanded to accommodate the fourth infrastructure component: tramway.

2012 - 2103 Swiss Federal Roads Office - FEDRO

Technical Concept for an Integral Preservation Planning System for Swiss National Highway System EMNS – project lead

The purpose of this project is to develop technical concept for integral planning of preservation projects on highway system by bundling preservation actions on neighboring objects (e. g. pavement sections, bridges, tunnels, etc.) in a package in order to reduce the negative impact on users. To goal is to find the optimum preservation corridors.

2011 – 2012 Swiss Federal Roads Office - FEDRO

Technical Lead of the Development of Building Inventory and Management System IBBS – project lead

Apart from road infrastructure FEDRO is the owner of numerous buildings, which need to be kept track of and in this project a relatively simple inventory system, has been developed.

2010 – 2011 Swiss Federal Roads Office – FEDRO

Preliminary Analysis and Market Analysis of Inventory and Management System for Operational and Safety Electromechanical Devices – project co-lead

Operational and safety electromechanical devices are growing and increasingly important part of road infrastructure, which requires careful and timely planning of maintenance needs and related budget. The requirements for a decision support system have been defined and off-the-shelf products have been examined with regard to their compliance with these requirements.

2008 - 2011 Swiss Federal Roads Office - FEDRO

Technical Lead of the Development of Road Structures and Tunnels Inventory and Management System KUBA 5.0 – project lead

The purpose of this project was to supervise, control and mentor the commissioned software company during the realization of KUBA 5.0. In this project the existing Road Structures Inventory software component KUBA-DB is being further developed to accommodate tunnel structures.

2008 Canton Vaud

"Development of an Management Tool for Road Structures" – project lead

In this project a simple object level management tool for planning of maintenance activities and corresponding financial needs has been developed. The particularity of the underlying approach is explicit consideration of risk in decision making process.

2007 - 2008 Canton Basle-City

Development of an Integral Management Tool for Public Infrastructure – project lead

The developed novel methodology enables integral treatment of all components of public infrastructure in urban environment. Potential synergetic effects are thus taken into account and corresponding long term financial needs can be evaluated. Currently the developed software tool is productive and encompasses three infrastructure components: pavement, road structures and sewer system.

2007 Federal Waterways Engineering and Research Institute, Karlsruhe, Germany

Feasibility Study on Application of Markov-Chains in Deterioration Modeling of Waterway Structures – project lead

The purpose of the study was to suggest a stochastic model for deterioration of waterway structures based on the existing guidelines. The main challenge was to integrate given heuristic rules by which the condition state on structural level is derived from the damages on element level into a stochastic model.

2007 Swiss Federal Roads Office - FEDRO

Management and Technical Lead of Structural Data Acquisition – project lead

In this project FEDRO was supported in project definition, commissioning, technical support and quality control in acquisition of structural data for all bridges (over 3'500) on Swiss National Highway System.

2006 – 2007	Canton Basle-City "Development of an Management Tool for River Embankment Structures" – project lead In this project a novel management tool for planning of maintenance activities and corresponding financial needs for maintenance of river embankments (in particular of the river Rhein) has been developed.
2006	Canton Basle-City "Development of an Management Tool for Road Structures" – project lead In this project a simple object level management tool for planning of maintenance activities and corresponding financial needs has been developed.
2005 – 2006	Réseau Ferré de France – RFF "Technical Audit of Railway Structures" – team member In this project a technical audit of railway structures in France was performed on national level. This project was a part of a technical audit of all railway system components in France lead by Prof. Dr. R. Rivier of EPFL.
2006 - 2008	Swiss Federal Roads Office - FEDRO "Technical Lead of the Development of Road Structures Inventory and Management System KUBA 4.0" – project lead" The purpose of this project was to supervise, control and mentor the commissioned software company during the realization of KUBA 4.0. In this project the existing Road Structures Inventory System KUBA-DB was enhanced by a Road Structures Management System into KUBA 4.0.
2005 - 2006	Swiss Federal Roads Office - FEDRO Requirement Analysis and Software Design for the Extension of Road Structures Inventory Information System for Tunnels (KUBA 5.0) – project lead The purpose of this project was to set software specifications for the further development of KUBA-DB to accommodate tunnel structures.
2005 – 2006	Swiss Federal Railways "Master Plan for Infrastructure Division" – project lead Development of an overarching management framework for all infrastructure components of Swiss Federal Railways. This includes both civil and electromechanical infrastructure.
2005 – 2006	Swiss Federal Railways "LCM+" – subproject lead Development of a methodology for evaluation of life cycle costs of architectural products and respective maintenance actions
2005	Swiss Federal Railways "Development of an Management Tool for Railway Structures" – project lead Development of a simple tool to estimate long term financial needs for the maintenance of Railway Structures.
2003 – 2004	Swiss Federal Roads Office - FEDRO "Technical Specification for Tunnel Inventory System" – subproject lead The purpose of this project was to set technical specifications for the further development of KUBA to accommodate tunnel structures.
2000 – 2001	Swiss Federal Roads Office – FEDRO "Requirement Analysis and Software Design for the Road Structures Management System (KUBA-MS)" – project lead The purpose of this project was to set software specifications for Road Structures Managements System (KUBA-MS). In addition integration of KUBA-DB and KUBA-MS into Road Structure Inventory and Management System KUBA is designed.
1999 - 2001	Swiss Federal Roads Office - FEDRO "Technical Lead of the Development of Road Structures Inventory and Management System KUBA-DB 3.0" – project lead" The purpose of this project was to supervise, control and mentor the commissioned software company during the realization of KUBA-DB 3.0.
1997 – 1999	Cantons Ticino and Aargau "Detailed Specification, Design and Realization of the Road Structure Management System software prototype (KUBA-MS-Ticino) – project lead The cantons Ticino and Aargau commissioned this project to perform a proof-of-concept of developed methodology for KUBA-MS.

	1997 – 1998	Swiss Federal Roads Office - FEDRO "Requirement Analysis and Software Design for the Road Structures Inventory System (KUBA-DB)" – project lead The Road Structures Inventory Information System KUBA-DB is a classical database application, which serves as a basis for Management System (KUBA-MS). It is currently used in 24 cantons.
	1996 – 1998	Canton St. Gallen Requirement Analysis, Software Design and Realization of the new Bridge Load Rating Software (TRUCK) – project lead The software TRUCK is a load-rating tool, which enables a bridge engineer to decide whether a given heavy transport may pass along a certain route. For this purpose, it compares stresses induced by design code loads with ones due to exceptional transport. The software was subsequently integrated in KUBA and is envisioned to be a part of a web-based permit issuing software for special transports.
	1994 – 1995	Swiss Federal Roads Office – FEDRO Concept and functional specification for the Road Structure Management System (KUBA-MS) – project lead The road structure management system KUBA-MS is a modern decision support tool for planning maintenance actions on road structures. It was inspired by the US system PONTIS developed by the FHWA and currently owned by AASHTO. KUBA-MS comprises a classical database function and modern operation research and expert system methods. This project served as a conceptual basis for subsequent development of KUBA-MS.
STRUCTURAL ENGINEERING / BUILDINGS	2001	SairGroup (AviReal and SR Technics), Kloten "Design of the Jet Engine Test Cell" – project lead The structure has to resist the loading due to new powerful jet engines and to fulfill strict environmental requirements.
	1993	Sulzer Inc., Winterthur Structural assessment of the high-rise Sulzer building in Winterthur – project lead The poor visual appearance of a structure triggered this assessment in particular with regard to earthquake resistance.
	1991 – 1992	Investment group HB-Südwest Preliminary design and structural analysis of the master slab of the railway station HB-Südwest – team member The slab is design to cover the complete railway station (18 platforms) and to carry two eight-story buildings. The area not used for buildings will serve as gathering plaza. The construction of this project was delayed by an economic recession in 90's and finally abandoned in 2000.
	1989	CBM Engineers, Inc., Houston, USA Structural analysis of the Library Square Tower (now: First Interstate World Center) in Los Angeles (under supervision of Prof. B. Thurlimann) – team member Consulting services have been provided to CBM Engineers, Inc., Houston, TX in order to increase earthquake resistance of the building. The suggested measures were implemented. The architect was I. M. Pei, NYC. The building is 1000 ft. tall.
	1985	I. M. Pei Stability analysis of I.M. Pei's Pyramid in Louvre, Paris (under supervision of Prof. B. Thurlimann) – team member Consulting services have been provided in order to check and, if necessary redesign the entrance to the famous glass pyramid.
STRUCTURAL ENGINEERING / BRIDGES	1997 - 2000	City of Plock, Poland "Design of the Cable Stayed Bridge over Vistula River" – cable final design lead The design included also a study of dynamic behavior in wind. The bridge was finished in 2005.
	1997	State of Liechtenstein Structural assessment and risk analysis of a bridge in Bendern, Liechtenstein – project lead The bridge has a span of 60m and carries a road with large volume of heavy vehicle traffic.

	1996	City of Plock, Poland First prize in the international design competition for a bridge over the Vistula River in Plock, Poland – cable design lead. The project was awarded the first prize in the international competition organized by a Polish Road Administration. The bridge was designed as a cable stayed structure with a span of 375m.
	1996	Canton Basle-City First prize in the international design/build competition for a bridge over the Rhine River in Basle (Dreirosenbrücke) – team member for preliminary design and final design of foundations The project was awarded the first prize in the international competition organized by a Road Administration of Canton Basle. The bridge is a double-decker bridge with the steel truss between the upper and the lower deck. The new bridge has to replace the old one without traffic interruptions, which poses a challenging problem for foundations.
	1995	Swiss Federal Railways Replacement project of the flyover "Sturzeneggstrasse" – project lead The project was awarded by Swiss Federal Railways. The flyover is designed as a frame structure with a span of 30 m. The construction was finished in 1995.
	1994 – 1995	Etzelwerke AG Project of the slab replacement for the bridge "Höhport" in Euthal – project lead The challenge in this project was to design the bridge in ecologically sensitive environment. The slab of the existing reinforced concrete frame was replaced by a composite slab (thin concrete slab on steel girders) restoring bending moment transfer to existing walls. In such a manner the foundation remained intact and although the new slab is significantly wider the overall weight of the bridge did not change. The bridge exhibits the main span of 25m.
	1993	Structural assessment and risk analysis of the bridge "Höhport" in Euthal, Switzerland – project lead The poor condition and functional deficiency of this bridge triggered the structural assessment, which lead to slab replacement.
STRUCTURAL ENGINEERING / OTHER PROJECTS	1993	Locher AG, Zürich Structural analysis of the alternative design of the Adlertunnel near Basel, Switzerland –expertise Consulting services were provided to the bidding contractor in order to reduce the construction costs in difficult geological situation (anhydrite). The contractor lost the bid. The expertise was interesting since theory of plasticity was used to estimate the load carrying capacity of a tunnel shell.
	1993	Dynamic analysis of train induced vibrations in a multiple interchange structure near Schweizerhalle, Switzerland – project lead Consulting services were provided to Canton of Basle-Country. The structure comprises one railway and two motorway levels. The vibrations were produced by railway traffic.
	1985	Dynamic analysis of the cover plates for Sonnenbergtunnel in Lucerne, which bridge the gap that guide the shelter doors (under supervision of Dr. B. Zimmerli) – team member Since the plates are light (can be lifted manually), there was concern about their dynamic behavior when subjected to the weight of moving heavy vehicles. The suggested measures were implemented.

SELECTED RESEARCH PROJECTS

INFRASTRUCTURE MANAGEMENT	2018 -	H202 project "GIS-based Infrastructure Managemet System for optimized response to extreme events of terrestrial transport networks – SAFEWAY", Work Package Leader
	2017 -	H2020 project "Safety of transport infrastructure on the TEN-T network – SAFE-10-T", member
	2016 – 2017	Federal Highway Research Institute (BAST), Germany "Reliability-based inspection of bridges - Lead
	2015 -	"Quality specifications for roadway bridges, standardization at a European level (BridgeSpec)", COST Action TU1406, Leader of WG3 and Core Group

member

2014 - "Quantifying the value of structural health monitoring", COST Action TU1402, Member of the Management Committee.

2012 - 2015 Association of Swiss Road and Traffic Engineers (VSS)
"Temporal Aspects and Historization" – co-lead
This project delivers the fundamentals in modeling temporal infrastructure database. This means that the inventory database should be able to track all relevant changes of physical infrastructure.

2011 - 2017 Association of Swiss Road and Traffic Engineers (VSS)
"Asset Management – Initial Project" – co-lead
This project is a preparatory project for a research package, which would address all relevant issue of "Asset Management" including terminology, methods, evaluation and procedures related to modern management of public infrastructures, in particular roads.

2010 - 2014 Association of Swiss Road and Traffic Engineers (VSS)
"Determination of Homogenous Pavement Sections for Planning of Preservation Actions" – subproject lead
The project examines an original approach to determine maintenance sections of roads based on condition states. The project lead is with the Institute of Structural Engineering /IVT) of ETHZ (Prof. H-P. Lindenmann)

2010 - 2012 Association of Swiss Road and Traffic Engineers (VSS)
"Evaluation of road maintenance measures" – subproject lead
The methodology developed in project "Total Benefit and Benefit-Cost Ratio of Standard Interventions for Road Maintenance" has been tested on 9 case studies and possible improvements have been outlined.

2008 - 2009 Working Group on Bridge Research (AGB)
"Test Region" – subproject lead
The purpose of this project is to demonstrate applicability of research results of the research package "Safety of the road traffic system and its civil engineering structures" in a real world example. The project lead was with the Institute of Structural Engineering /IBK) of ETHZ (Prof. Dr. M. H. Faber)

2007 - 2009 Working Group on Bridge Research (AGB)
"Effectivity of Risk Reducing Interventions" – team member
In this project the methodology is developed for estimation of the optimum risk reducing interventions. The methodology is demonstrated on several case studies. The project is a part of the research package "Safety of the road traffic system and its civil engineering structures".

2007 – 2013 Swiss Federal Roads Office – FEDRO
"Planning of optimum highway work zones – subproject lead
The aim of the project is to further elaborate mathematical methods developed within the project "Process of Optimization in Maintenance and Rehabilitation Management System of Roads" for planning highway work zones and optimization of interventions in the long term. The proof-of-concept will be shown in typical case studies. The project lead is with the Institute for Transport Planning and Systems (IVT) of ETHZ (Prof. H. P. Lindenamann).

2007 – 2009 Swiss National Science Foundation
"Consideration of Vulnerability in the Management of Swiss Transportation Infrastructure" – project lead
In this project a methodology was developed to integrate vulnerability of infrastructure components due to sudden events in existing infrastructure management systems. The project is carried out in collaboration with the Institute for Transport Planning and Systems (IVT) of ETHZ (Prof. Dr. K. W. Axhausen).

2006 - 2008 Association of Swiss Road and Traffic Engineers (VSS)
"Total Benefit and Benefit-Cost Ratio of Standard Interventions for Road Maintenance" – subproject lead
This project delivers the fundamentals to determine the total benefit and the cost-benefit ratio of standard interventions for pavement maintenance.

2005 - 2017 Working Group on Bridge Research (AGB) / Association of Swiss Road and Traffic Engineers (VSS)
"Cost Model for Preservation of Road Structures" – project lead
Development of cost models to be used by agencies in the estimation of the future cost estimates for road interventions.

2001 – 2004 Association of Swiss Road and Traffic Engineers (VSS)
"Process of optimization in Maintenance and Rehabilitation Management System of Roads" – team member
In this project decision making process for envisioned integrated infrastructure

management system are developed. This includes, but is not limited to development of optimization algorithm. The envisioned Infrastructure Management System encompasses bridges, pavement, tunnels and electromechanical devices.

1999 Swiss Federal Roads Office – FEDRO
"Cost Relevant Elements for Road Structure Management System" – project lead
In this study the minimum number of element types was identified upon which the Swiss Road Structure Management System is based. For this purpose, performed maintenance actions have been statistically analyzed and a method for further data acquisition has been proposed.

1998 - 2001 Alliance for Global Sustainability
"Maintenance for sustainable road infrastructure" – team member
In this project the importance of road infrastructure for the national economy is investigated. The focus of this research is economic rather than ecological sustainability. Two case studies have been already performed: one in Tanzania and one in Switzerland. Based upon these two case studies differences in maintenance strategies for both developed and developing countries are outlined. This research is funded by Alliance for Global Sustainability, which is a fund-raising organization founded by MIT, the University of Tokyo and the Swiss Federal Institutes of Technology in Zurich and Lausanne.

1998 Canton St. Gallen
"Integration of Load Rating Software with Automatic Acquisition of Axle Loads and Number of Axles of Road Vehicles" – subproject lead
This study was performed together with Kistler AG a leading suppliers of sensors and sensor electronics for measuring pressure, force, torque and acceleration.

1997 - 2000 Working Group on Bridge Research (AGB)
"Development of a Physically Based Method for Estimation of Markov chains Used in a Bridge Management System" – advisor
In this research project the deterioration of bridges has been investigated and its impact on structural resistance, based on physical and chemical phenomena (chloride penetration, corrosion, etc.). In particular a method has been developed to establish a connection between deterioration degree and condition class as described for bridge management. This research is funded by Swiss Federal Roads Office.

STRUCTURAL ENGINEERING

1987-1990 Swiss Federal Institute of Technology in Zurich
"Development of the Computer-aided Analysis and Design of Reinforced Concrete Walls Using Stress Fields" – Ph. D. Student
Design based on strut-and-tie and/or stress field is regarded as the typical manual methods. The developed methodology allows the designer to construct his "own" stress field, freeing him from tedious calculations. This methodology has been implemented as software SFS.

1988 Swiss Federal Institute of Technology in Zurich
Punching Test on Reinforced Concrete Slabs – team member

1986 Swiss Federal Institute of Technology in Zurich
Study on performed shear tests on reinforced and prestressed concrete beams performed in Switzerland and abroad (ca. 300 tests) – team member

1984-1985 Swiss Federal Institute of Technology in Zurich
Shear and bending tests on the dowel connection between two reinforced concrete slabs – team member
The tested dowel connection was constructed in the University Hospital in Zurich

INVITED PRESENTATIONS, LECTURES AND COURSES

2018 Evaluation of Bridge Resilience, Invited lecture for TRB Workshop 134, Resilience, Safety, and Security of Bridges and Tunnels: U.S. and International Topics, Washington D. C., January 7, 2018

2017 Asset Management, Course for Infraestruturas Portugal, December 14-16, 2017, Lisbon, Portugal

2017 Asset Management, Course for Infraestruturas Portugal and University of Minho, March 28-31, 2017, Guimaraes, Portugal

2016 Asset Management Norm ISO 55000 – Was bringt sie uns (What is the benefit of it)?, Invited lecture for Swiss Association of Electricity Enterproses, Olten.

2016 Asset Management Norm ISO 55000 – Was bringt sie den Städten und Gemeinden (What is the benefit to cities and communities)?, Invited lecture for Association of Swiss Communities, Solothurn.

2016 Why maintenance management? Invited lecture for Rotary Schwyz, Schwyz.

2014 GIS in Infrastructure Management – Opportunities and Challenges, Invited lecture at Geospatial World Forum, Geneva.

2014 Estimation of Preservation Needs (Ermittlung des Finanzbedarfs für Brücken), Invited lecture for the First German Colloquium on Bridge Maintenance, Technical Academy Esslingen, June 24, 2014.

Risk-Based Preservation Management (Risikobasiertes Erhaltungsmanagment), Invited lecture at EMS DACH (Germany/Austria/Switzerland) Meeting (in German), Nürnberg, April 24-25, 2014

2013 Swiss Experience in Hazard Analysis, Risk Evaluation and Intervenation Planning, Invited lecture for TRB Workshop 106, Bridge and Tunnel Safety and Security Considerations: International Perspective, Washington D. C., January 13, 2013

2012 Assessment of Structures on Swiss Road Network (Bauwerksprüfung von Brücken in der Schweiz), Invited lecture for VFIB 5th General Assembly (VFIB 5. Mitgliederversammlung), (in German) Federal Ministry of Transport, Building and Urban Development (Bundesministerium für Verkehr, Bau und Stadtentwicklung), Bonn, June 12, 2012

Asset Management – What is (not) Understood Beneath? (Asset Management – Was versteht man (nicht) darunter?), Invited lecture at EMS DACH (Germany/Austria/Switzerland) Meeting (in German), Ascona, April 26-27, 2012.

Determination of Preservation Needs for Road Structures (Ermittlung des Erhaltungsbedarfs bei Ingenieurbauwerken), Invited lecture at EMS DACH (Germany/Austria/Switzerland) Meeting (in German), Ascona, April 26-27, 2012.

Advances in Assessment of Bridges in Switzerland, Invited lecture for the TRB subcommittee AHD 35(1) on Safety and Security of Bridges and Structures, January 23, 2012.

2011 Basic Issues of Preservation Management (Grundsatzfragen des Erhaltungsmanagements), Invited Lecture for VSS/MISTRA Symposium on Preservation and Management Information System Road and Traffic (Informations- und Fachtagung: Erhaltungsmanagement und Managementinformationssystem Strasse und Strassenverkehr), November 29, 2011.

Ruđer Bošković: Founder of Modern Civil Engineering (Ruđer Bošković: Začetnik modernog građevinskog inženjerstva), Invited lecture for a symposium in honor of the 300th anniversary of Ruđer Bošković's birth (in Serbian), October 26, 2011, Serbian Academy of Science and Arts, Belgrade.

Asset Management, Introductory and concluding lecture for workshop on Asset Management at the DACH (Germany/Austria/Switzerland) Meeting (in German), Köln, November 3-4, 2011

Recent Research in Infrastructure Management in Switzerland, Invited lecture on Institute of Transportation Studies, University of California, Berkeley, July 28, 2011

New Features in KUBA 5, Invited lecture for the TRB subcommittee AHD 35(2) on Bridge Life Cycle Cost Analysis, January 24, 2011

2010 Software System Road Structures and Tunnels – KUBA 5.0 (Fachapplikation Kunstbauten und Tunnel - KUBA 5.0), Invited lecture at EMS DACH (Germany/Austria/Switzerland) Meeting (in German), Graz, April 15-16, 2010.

2009 Management of Network Infrastructures: Aims, Challenges and Tools, Invited lecture for Seminar on Infrastructure Management: Challenges and Methods, Swiss Federal Institute of Technology in Zurich, Zurich, 2009.

Effectiveness and efficiency of Interventions (Effektivität und Effizienz von Massnahmen), Invited Lecture at Symposium on Research Package AGB1: "Safety of the road traffic system and its civil engineering structures" (in German), Bern, May 7, 2009.

Integrated Preservation Management (Integriertes Erhaltungsmanagement). Invited lecture at DACH (Germany/Austria/Switzerland) Meeting (in German), Lucerne, April 23-24,2009.

Optimization of Working Zones on Highways (Optimierung der Baustellenplanung an Autobahnen). Invited lecture at DACH (Germany/Austria/Switzerland) Meeting (in German), Lucerne, April 23-24, 2009.

2008	Road Structures: Financial Needs and Preservation Measures (Kunstbauten: Finanzbedarf und Unterhaltsmassnahmen), Invited Lecture for VSS Symposium "New Orientation of Road Preservation in Switzerland" (Neuorientierung des Strassenunterhalts in der Schweiz) (in German), Olten, November 4, 2008.
	Consideration of Risk Aspects in the Management of Swiss Transportation Infrastructure, Invited lecture at the University of Waterloo, Department of Civil and Environmental Engineering, Waterloo, October 15, 2008.
	Road Structure Management in Switzerland. Invited lecture at the Lehigh University, Department of Civil and Environmental Engineering, Bethlehem, January 18, 2008.
2007	Road Structure Management in Switzerland, Keynote lecture at the 2nd International Workshop on Lifetime Engineering of Civil Infrastructure, Systems Design Laboratory, Yamaguchi University, Yamaguchi, November 2008.
	Asset Management. Invited lecture at U.S. – Europe Workshop on Long Term Bridge Performance Program, Swiss Federal Laboratories for Materials Testing and Research, Dübendorf, September 2007.
	Software System KUBA 4.0 (Fachapplikation KUBA 4.0). Invited lecture at VSS/FEDRO meeting on Road Management System – MISTRA (in German), Berne, 2007
2005	Road Structures – Maintenance Management (Kunstbauten – Erhaltungsmanagement), Invited lecture at VSS/FEDRO meeting on Preservation Management (in German), 2007.
2004	Swiss Road Structure Management System (Schweizer Kunstbautenmanagementsystem KUBA-MS). Invited lecture at DACH (Germany/Austria/Switzerland) Meeting (in German), Innsbruck, 2004.
	Management of Road Structures in Switzerland and Related Database System (Upravljanje putnim objektima u Švajcarskoj sa posebnim osvrtom na banku podataka KUBA-DB). Invited Lecture for DARS - Motorway Company in the Republic of Slovenia (in Serbian), Ljubljana, 2004.
2003	Infrastruktursysteme – Effizienz versus Robustheit (Infrastructure Systems – Efficiency vs. Robustness). Invited lecture for Seminar on Infrastructure Systems, Swiss Federal Institute of Technology in Zurich (in German), Zurich, 2003.
2002	Bridge Management in Switzerland. Invited lecture for annual meeting of Committee on Bridge Management of Transportation Research Board, Washington D.C., 2002.
	Menadžment građevinske infrastrukture – razvoj i izazovi (Civil Infrastructure Management – Development and Challenges). Invited lecture at Department of Civil Engineering, University of Belgrade (in Serbian), Belgrade, 2002.
	Integrated Management of Swiss National Road Network. Invited lecture at the University of California, Berkeley, Department of Civil and Environmental Engineering, Berkeley, 2002.
	Opportunities and Challenges in Road Infrastructure Management. Invited lecture at the Carnegie Mellon University, Department of Civil and Environmental Engineering, Pittsburgh, 2002.
2000	The Development of Swiss Bridge Management System and Related Research Activities. Invited lecture at Cornell University, School of Civil & Environmental Engineering, Ithaca NY, USA, 2000.
	The Swiss Bridge Management System in the Framework of an Integrated Asset Management System. Invited lecture at Federal Highway Administration, Turner Fairbank Highway Research Center, McLean VA, USA, 2000.
	Management of Road Infrastructure Systems - An Engineering Challenge. Invited lecture at University of Pennsylvania, Department of Systems Engineering, Philadelphia PA, USA, 2000.
1999	Information Technology in Practice –Exploiting Potentials. Invitation as keynote lecture for the IABSE Symposium (International Association for Bridge and Structural Engineering) – Rio de Janiero 1999.
1997	Bridge Management System in Switzerland - KUBA-MS. Invited lecture for Finnish Bridge Panel, Bern, 1997.
	Mangeldnes Geld – Unterhalt der Bauwerke: Was, wann, wie? (Lacking money – Maintenance of Structures: What, when, how?). Invited lecture for Swiss Federal Railway Conference in Glion – Montreux (in German), 1993.

1996 Wieviel Management braucht die Brückenerhaltung? (How much management does the preservation of bridges need?). Invited lecture by SIA Technical Group on Preservation of Structures for Meeting (in German) “Bauwerkserhaltung und Wirtschaftlichkeit - Perspektiven einer modernen Aufgabe (Preservation of Structures and Economy - the perspectives of a modern task)”, Bern, 1996.

Analiza graničnog stanja nosivosti primenom naponskih polja (Analysis of the ultimate load using stress fields). Invited lecture at the scientific meeting “Mechanics, Materials and Structures”, April 17 to 19, 1995, Serbian Academy of Science and Arts, Belgrade

1995 Berechnung einer zweischaligen Tunnelauskleidung (Analysis of the doubled shell tunnel coating). Invited lecture by Institute for Structural Engineering ETH Zurich (in German) for the course “STATIK-N: Ein neues Computerprogramm für die nichtlineare Berechnung ebener Rahmen (STATIK-N: A New Computer Program for the non-linear Analysis of Frames)”, Zurich, 1995.

Bridge Management - State of Swiss development based on PONTIS. Invited lecture for FHWA Bridge Structural Panel, Bern, 1995.

1990 Computerunterstützte Berechnung und Bemessung von Stahlbetonscheiben mit Spannungsfeldern. Invited lecture for Colloquium “Orientierung über neue Computerprogramme auf dem Gebiet der Plastizitätstheorie (New Computer Programs based on Theory of Plasticity)” (in German), organized by Institute for Structural Engineering (Prof. B. Thürlimann), ETHZ, 1990.
Computerunterstützte Berechnung und Bemessung von Stahlbetonscheiben mit Spannungsfeldern (CAD of Reinforced Concrete Structures Using Stress Fields). Invited lecture for public colloquium at Technical University of Graz, Austria, (in German) 1990.

Computerunterstützte Berechnung und Bemessung von Stahlbetonscheiben mit Spannungsfeldern (CAD of Reinforced Concrete Walls Using Stress Fields). Invited lecture for public colloquium at University for Environmental Engineering, Vienna, Austria, (in German), 1990.

Konstrukcija u arhitekturi (Structure in Architecture). Invited lecture for public Colloquium at Faculty for Architecture of the University of Belgrade (in Serbian), 1990.

PUBLICATIONS

JOURNAL PAPERS (REFEREED)

N. Tanasić, R. Hajdin, Management of Bridges with Shallow Foundations Exposed to Local Scour, Journal of Structure and Infrastructure Engineering, Special issue on IABMAS 2016, published online 2017, doi: 10.1080/15732479.2017.1406960, print in 2018.

S. Mašović, R. Hajdin, Modelling of bridge elements deterioration for Serbian bridge inventory, Journal of Structure and Infrastructure Engineering, Volume 10, Issue 8, 2014.

N. Tanasić, V. Ilić, R. Hajdin, Vulnerability Assessment of Bridges Exposed to Scour, Transportation Research Record: Journal of the Transportation Research Board No. 2360, pp. 36-44, 2013

B. Adey, T. Herrmann, K. Tsafantinos, J. Lüking, N. Schindele, R. Hajdin, Methodology and Base Cost Models to Determine the Total Benefits of Preservation Interventions and Road Sections in Switzerland, Journal of Structure and Infrastructure Engineering, Vol. 8, No. 7, 639 – 654, 2012.

B. Adey, R. Hajdin, Methodology for determination of financial needs of gradually deteriorating bridges, Journal of Structure and Infrastructure Engineering, Vol. 7, No. 7-8, 645 – 660, 2011.

A. Erath, J. Birdsall, K. Axhausen, R. Hajdin, Vulnerability Assessment of the Swiss Road Network, Transportation Research Record: Journal of the Transportation Research Board, Volume 2137, 118-126, 2009.

R. Hajdin, H. Lindenmann, Algorithm for the Planning of Optimum Highway Work Zones, Journal of Infrastructure Systems, Vol. 13, No. 3., 202-214, 2007.

B. Adey, R. Hajdin, Potential Use of Inventory Theory to Bundle Interventions in Bridge Management Systems, Transportation Research Record, Journal of the Transportation Research Board, No. 1933, pp. 44-49, 2005.

G. Roeflstra, R. Hajdin, E. Brühwiler, Condition Evolution in BMS and Corrosion Induced

Deterioration, ASCE Journal of Bridge Engineering, Volume 9. No.3, pp 268-277, 2004.

B. Adey, R. Hajdin, E. Brühwiler, Effect of Common Cause Failures on Indirect Costs, ASCE Journal of Bridge Engineering , Volume 9, No. 2, pp. 200-208, 2004.

B. Adey, R. Hajdin, E. Bruhwiler, A Supply and Demand System Approach to the Development of Bridge Management Strategies, ASCE Journal of Infrastructure Systems Volume 3, Issue 3, pp. 117-131, 2003.

B. Adey, R. Hajdin, E. Bruhwiler, Risk Based Approach to the Determination of Optimal Interventions for Bridges Affected by Multiple Hazards, Engineering Structures, 25, pp.903-912, June 2003.

R. Hajdin, Bridge Management Systems, Introduction to Series "Bridge Management Systems" in Structural Engineering International, Nr. 3/98, 1998.

CONFERENCE PAPERS (REFEREED)

R. Hajdin, N. Tanasić, M. Kušar, J. Amado, A novel Quality Control Framework for the management of existing bridges, 39th IABSE Symposium – Engineering the Future, September 21-23, 2017, Vancouver, Canada.

R. Hajdin, Visual Inspections and KPIs – Bridging the gap, 11th International Bridge and Structure Management Conference, Mesa, AZ, April 26-27, 2017, Transportation Research Circular, E-C224, November 2017.

N. Tanasić, R. Hajdin, Top-level performance indicator for bridges exposed to flooding hazards, 11th International Bridge and Structure Management Conference, Mesa, AZ, April 26-27, 2017, Transportation Research Circular, E-C224, November 2017.

J. Wunderlich, R. Hajdin, Implementation of Road Structure Management System KUBA – Experience report, 11th International Bridge and Structure Management Conference, Mesa, AZ, April 26-27, 2017, Transportation Research Circular, E-C224, November 2017.

N. Tanasić, Management of bridges with shallow foundations exposed to local scour, Eighth International Conference on Bridge Maintenance, Safety and Management (IABMAS'16), Foz do Iguaçu, June 26 – 30, 2016

R. Hajdin, Quality Control Plans for Road Bridges, Eighth International Conference on Bridge Maintenance, Safety and Management (IABMAS'16), Foz do Iguaçu, June 26 – 30, 2016

M. Botzen, F. Schiffmann, R. Hajdin, A novel road sectioning technique for pavement management, 95th Annual Meeting of the Transportation Research Board, Washington D.C., United States of America, January 10-14, 2016.

S. Mašović, R. Hajdin, S. Stošić, Application of Semi-Markov Decision Process in Bridge Management, IABSE Conference – Structural Engineering: Providing Solutions to Global Challenges, September 23-25 2015, Geneva, Switzerland

N. Tanasic, R. Hajdin, Bridge failure modes due to local scour, 7th International Conference on Bridge Maintenance, Safety and Management, IABMAS, Shanghai, China, July 7-11, 2014.

S. Masovic, R. Hajdin, Time-inhomogeneous Markov Chains in the Bridge Management, 7th International Conference on Bridge Maintenance, Safety and Management, IABMAS, Shanghai, China, July 7-11, 2014.

B. Adey, R. Hajdin, Methodology to Determine Financial Needs of River Structures, The IABSE Symposium on Large Structures and Infrastructures for Environmentally Constrained and Urbanized Areas, Venice, 2010.

B. Adey., J. Birdsall, R. Hajdin, Methodology to estimate risk related to road links, due to latent processes, 5th International Conference on Bridge Maintenance, Safety and Management, IABMAS, Philadelphia, USA, July 11-15, 2010.

A. Erath, J. Birdsall, K. Axhausen, R. Hajdin, Vulnerability Assessment of the Swiss Road Network, 88th Annual Meeting of the Transportation Research Board, Washington D.C., United States of America, January 11-15, 2009.

R. Hajdin, KUBA 4.0 – The Swiss Road Structure Management System, Transportation Research Board, 10th International Bridge and Structure Management Conference, Buffalo, New York, October 20-22, 2008.

R. Hajdin, L. Peeters, Bridging Data Voids: Advanced Statistical Methods for Bridge Management in KUBA, Transportation Research Board, 10th International Bridge and

Structure Management Conference, Buffalo, New York, October 20-22, 2008.

B: Adey, R. Hajdin, Technical Audits of Rail Infrastructure: Description of Existing Infrastructure and Evaluation of Past Performance, 10th International Bridge and Structure Management Conference, Buffalo, New York, October 20-22, 2008.

J. Birdsall, R. Hajdin, Vulnerability Assessment of Individual Infrastructure Objects Subjected to Natural Hazards, 10th International Bridge and Structure Management Conference, Buffalo, New York, October 20-22, 2008.

B. Adey, R. Hajdin, Determination of Lowest Cost Intervention Strategies of Bridges, Their Financial Needs and the Consequences if they are not followed, 4th International Conference on Bridge Maintenance, Safety and Management, IABMAS, South Korea, July 13-17, 2008.

J. Birdsall, R. Hajdin, A. Erath, K. Axhausen, Assessing Infrastructure Vulnerability to Sudden Events. INFRADAY 2007: 6th Conference on applied infrastructure research, Berlin, Germany, 2007.

B. Adey, R. Hajdin, E. Brühwiler, Optimal Long Term Single Stage Intervention Strategies for Road Bridges, 3rd International Conference on Bridge Maintenance, Safety and Management, IABMAS, Lisbon, Portugal, July 16-19, 2006.

B. Adey, R. Hajdin, E. Brühwiler, Optimal Intervention Strategies for Multiple Bridges During Catch-up Periods Using Age Equivalents, 3rd International Conference on Bridge Maintenance, Safety and Management, IABMAS, Lisbon, Portugal, July 16-19, 2006.

R. Hajdin, B. Adey, Optimal Spatial Grouping of Highway Interventions, IFED, Lake Louise, Canada, April 26-29, 2006.

R. Hajdin, KUBA Version 4.0, IABSE Conference Operation, Maintenance and Rehabilitation of Large Infrastructure Projects, Bridges and Tunnels, Copenhagen, Denmark, 15-17 May, 2006.

B. Adey, E. Brühwiler, R. Hajdin, Determination of Optimal Intervention Strategies for Multiple Bridges During Catch-up Periods, 7th International Conference on Short and Medium Span Bridges, Montreal, Canada, 2006.

B. Adey, R. Hajdin, E. Brühwiler, Optimal Single Stage Strategies for Bridges, 7th International Conference on Short and Medium Span Bridges, Montreal, Canada, 2006.

R. Hajdin, B. Adey, An Algorithm to Determine Optimal Highway Worksites Subject to Distance and Budget constraints, 84th Annual Meeting of the Transportation Research Board, Washington D.C., United States of America, January 9-13, 2005.

R. Hajdin, Bridge Management and Structural Reliability, Life-Cycle Performance of Deteriorating Structures – Assessment, Design and Maintenance, Ed. D. M. Frangopol, E. Brühwiler, M. F. Faber, B. Adey, ASCE, 2003.

B. Adey, R. Hajdin, E. Bruhwiler, A Comparison of the Supply and Demand Approach to the Development of Bridge Management Strategies with Two Existing Approaches, International Bridge Management Conference, Orlando, Florida, April 28-30, 2002.

B. Adey, R. Hajdin, E. Brühwiler, A System Approach to the Reduction of Damage Costs due to Natural Hazards, IABSE Symposium, Melbourne, Australia, 2002.

R. Hajdin, Road Structure Management in Switzerland – Recent Developments, First International Conference on Bridge Maintenance, Safety and Management (IABMAS'02), Barcelona, July 14 –17 2002.

B. Adey, S. Bailey, R. Hajdin and E. Brühwiler, Updating Estimates of Bridge Reliability, First International Conference on Bridge Maintenance, Safety and Management (IABMAS'02), Barcelona, July 14 –17 2002.

B. Adey, R. Hajdin and E. Brühwiler, A Supply and Demand System Approach to Bridge Management, 6th International Conference on Probabilistic Safety Assessment and Management (PSAM6), 23-28 June, San Juan, Puerto Rico, USA, 2002.

B. Adey, R. Hajdin, E. Brühwiler, Comparison of Hazard Scenarios Using Probabilistic Methods, IABSE Symposium, Malta, 2001.

R. Hajdin, KUBA-MS: The Swiss Bridge Management Systems, The Structures Congress, ASCE, Washington D. C., 2001.

N. Hajdin, B. Stipanic, R. Hajdin, New Road Bridge across Vistula River at Plock in Poland, IABSE Congress, Lucerne, 2000.

M. Donzel, R. Hajdin, Road Structures Management System Development in Switzerland,

Proceedings of IABSE Congress, Lucerne, 2000.

R. Hajdin, BMS Development in Switzerland, The Structures Congress, ASCE, Philadelphia, 2000.

B. Adey, R. Hajdin, J. Kiiza., E. Brühwiler, Societal Benefits of Preservation Strategies for Civil Infrastructure, International Transdisciplinarity Conference, Swiss Federal Institute of Technology, Zurich, February 27 – March 1, 2000.

R. Hajdin, Information Technology in Practice –Exploiting Potentials, Proceedings of IABSE Symposium (International Association for Bridge and Structural Engineering) – Rio de Janiero, 1999.

G. Roelfstra, R. Hajdin, E. Brühwiler, The Condition Evolution of Concrete Bridges Based on a Segmental Approach, Non-destructive Testing and Deterioration Models, Transportation Research Board, International Bridge Management Conference, Denver, Colorado, April 26-28, 1999.

R. Hajdin, H. Ludescher, Distinctive features of Swiss Road Structures Management System - KUBA-MS, Transportation Research Board, International Bridge Management Conference, Denver, Colorado, April 26-28, 1999.

R. Hajdin, Z. Despot, TRUCK – Bridge Rating Software, Transportation Research Board, International Bridge Management Conference, Denver, Colorado, April 26-28, 1999.

R. Hajdin, Analiza graničnog stanja nosivosti primenom naponskih polja (Analysis of the ultimate load using stress fields), Proceeding of the scientific meeting "Mechanics, Materials and Structures", April 17 to 19, 1995, Published by Serbian Academy of Science and Arts, Belgrade (in Serbian), 1996.

E. Brühwiler, R. Hajdin, P. Kunz, Fatigue Safety of Existing Concrete Bridges in Jeopardy?, Fourth International Conference on Short & Medium Span Bridges, Halifax, Canada, 1993.

R. Hajdin, B. Thürlimann, CAD of Reinforced Concrete Structures Using Stress Fields, Proceedings of the 2. International Conference on Computer Aided Analysis and Design of Concrete Structures, Zell am See, Austria, 1990.

R. Hajdin, A New Finite Element for Plate Bending, Proceedings of the International Conference on Computer Aided Analysis and Design of Concrete Structures, Split, Croatia, 1984.

RESEARCH REPORTS

F. Schiffmann, R. Hajdin, "Verfahren zur Erhaltungsplanung von Strassennetzen in der Praxis (Methods of pavement management in practice)", Research Report Nr. 1624, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2017.

A-A- Rafi, A. Fastrich, R. Hajdin, "Asset Management der Strassen aus der Sicht des Erhaltungsmanagements: Initialprojekt (Road asset management from the point of view of maintenance management: Initial project)", Research Report Nr. 1626, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2017.

"B. T. Adey, M. J. Fuhr, R. Hajdin, M. Henriquez, M. Deublein, M. Schmid, R. Wicki, Kostenmodell für das Erhaltungsmanagement von Kunstbauten (Cost Model for Preservation of Road Structures)", Research Report Nr. 699, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2017.

Ch. Rosenthaler, R. Koch, R. Hajdin, M. Botzen, Forschungspaket "Nutzensteigerung für die Anwender des SIS / EP1: Zeitaspekte und Historisierung" (Research package "Increasung Utility of RIS / EP1: Temporal aspects and historization"), Research Report Nr. 1516, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2015.

E. Bernard, C. Marschal, R. Hajdin, Forschungspaket "Nutzensteigerung für die Anwender des SIS / EP6: Schnittstellen aus den Auswertungssystemen" (Research package "Increasing Utility of RIS / EP6: Interfaces between RIS and Buisines Itelligence Systems"), Research Report Nr. 1508, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2015.

F. Schiffmann, H. P. Lindenmann, R. Hajdin, M. Botzen, G, Girmscheid, Optimierung der Baustellenplanung an Autobahnen (Optimization of Workzones on Highways), Research Report Nr. 1424, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2013.

Ch. Rosentahler, R. Koch, C. Marschal, R. Hajdin, A. Rafi, U. Welte, Konzeptuelle Schnittstellen zwischen der Basisdatenbank und EMF-, EMK- und EMT-DB (Conceptual Interfaces between PMS-, BMS- and EMS Databases), Research Report Nr. 1384, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2012.

Th. Herrmann, J. Lüking, A. Schneider, A. Fastrich, R. Hajdin, B. Adey, Z. Mirzaei, Bewertung von Fahrbahn-Erhaltungsmassnahmen (Evaluation of Road Maintenance Measures),

Research Report Nr. 1404, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2012.

M. H. Faber, R. Hajdin, J. Köhler, M. Schubert, B. Adey, Testregion – Methoden zur Risikobeurteilung – Ergebnisbericht zur vergleichenden Risikobeurteilung (Test Region – Methods of Risk Assessment – Results Report on Comparative Risk Assessment), Research Report Nr. 632, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2010.

Ch. Rosenthaler, L. Schildknecht, J-L. Miserez, R. Hajdin, Objektorientierte Modellierung von Strasseninformationen (Modeling of Objects and Processes for the Road Information System), Research Report Nr. 1316, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2010.

A. van Linn, R. Hajdin, B. Adey, U. Welte, Effektivität und Effizienz von Massnahmen (Effectiveness and efficiency of Interventions), Research Report Nr. 620, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2009.

A. van Linn, R. Hajdin, B. Adey, U. Welte, Effektivität und Effizienz von Massnahmen bei Kunstbauten (Effectiveness and efficiency of interventions on highway structures), Research Report 625, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2009.

J. Lüking, Th. Hermann, N. Schindele, B. Adey, R. Hajdin, Gesamtnutzen und Nutzen-Kosten-Verhältnis von standardisierten Erhaltungsmassnahmen (Total Benefit and Benefit-Cost Ratio of Standard Interventions for Road Maintenance), Research Report Nr. 1244, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2008.

A. A. Rafi, R. Hajdin, U. Welte, Optimierungsprozesse im Management der Strassenerhaltung (Optimization Processes in Management of Road Maintenance), Research Report Nr. 1109, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2005.

G. Roelfstra, R. Hajdin, E. Brühwiler, Evolution de l'état de ponts-routes en béton (Evolution of the Condition State of Concrete Highway Bridges), Research report Nr. 560, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2001.

H. P. Lindenmann, H. Bär, R. Hajdin, C. Morzier, A. Rafi, H. R. Scheidegger, Ch. Scholer, U. Welte, Maintenance Management of Road Infrastructure (Erhaltungsmanagement der Strassenverkehrsanlagen), Research Report Nr. 492, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2000.

R. Hajdin, Computerunterstützte Berechnung von Stahlbetonscheiben mit Spannungsfeldern (Computer Aided Analysis and Design of Reinforced Concrete Walls Using Stress Fields), Report Nr. 175, Institute of Structural Engineering, ETHZ, 1990 (in German).

BOOKS, TEACHING MATERIAL AND MANUALS

M. Schläfli, R. Hajdin, KUBA, Technisches Handbuch (KUBA, Technical Manual), EDMZ Art. Nr. 308.654.d, Bern, 2000 (available in German and French).

H. Ludescher, R. Hajdin, KUBA-MS-Ticino, Benutzerhandbuch (Manual for Software KUBA-MS-Ticino), EDMZ Art. Nr. 308.342.D, Bern, 1998 (available in German and French).

R. Hajdin, H. Ludescher, Handbuch für Datenerfassung (Handbook for data acquisition for Management System), EDMZ Art. Nr. 308.341.D, Bern, 1998 (available in German and French).

R. Hajdin, Primena teorije plastičnosti u proračunu armiranih i prethodno napregnutih betonskih konstrukcija (Application of the theory of plasticity for reinforced and prestressed concrete structures), Lecture notes published as a book, Naučna knjiga, 1991 (in Serbian).

R. Hajdin, SFS User's Manual, Institute of Structural Engineering, ETHZ, 1990.

R. Hajdin, B. Thürlimann, Anwendung und Entwicklung von Spannungsfeldern (Application and Development of Stress Fields), Lecture notes, Institute for Structural Engineering, ETHZ, 1989 (in German).

R. Hajdin, B. Thürlimann, Seilsysteme (Tension Structures), Lecture Notes, Institute for Structural Engineering, ETHZ, 1988 (in German).

CODES OF PRACTICE AND GUIDELINES

FEDRO (Swiss Federal Roads Office), Guidelines for Data Collection for Road Structures on Swiss National Highway System in KUBA, Berne 2008 (in German and French).

AUTHOR OR CO-AUTHOR

FEDRO (Swiss Federal Roads Office), Guidelines for Design and Construction of Road Structures on Swiss National Highway System, BBL Ord. Nr. 308.313, Berne 2005 (in German and French)

FEDRO (Swiss Federal Roads Office), Guidelines for Monitoring and Maintenance of Road Structures on Swiss National Highway System, BBL Ord. Nr. 308.314, Berne 2005 (in German and French)

FEDRO (Swiss Federal Roads Office), Guidelines for Data Collection for Road Structures on Swiss National Highway System in KUBA, EDMZ Art. Nr. 308.653, Berne 2004 (in German and French).

SIA (Swiss Engineer and Architects) Documentation Nr. D 0133, Fatigue of Concrete Structures, 1997 (in German).

SIA (Swiss Engineers and Architects) Code of Practice 469, Preservation of Structures, Zurich 1996 (in German and French).

Internal Guidelines for Analysis and Design in Geotechnical Engineering, Universal Ingenieur AG, 1994 (in German).

Internal Guidelines for Application of the Swiss Code of Practice SIA 162, "Concrete Structures", Universal Ingenieur AG, 1993 (in German).

OTHER PUBLISHED CONTRIBUTIONS

V. Ilic, N. Tanasic, R. Hajdin, Estimation of indirect costs due to the road link interruption caused by a bridge functional deficiency (Procena indirektnih troškova usled prekida putne veze zbog smanjenja funkcionalnih performansi mosta), Put i saobraćaj, 3/2014.

R. Hajdin, Rudjer Boskovic: Founder of modern structural engineering (Ruđer Bošković: Začetnik modernog građevinskog inženjerstva), Zbornik SANU, 2014.

R. Hajdin, Managenent of high volume roads (Upravljanje održavanja visoko opterećenih autoputeva), Helicon Publishing, 2013

L. Seiler, R. Hajdin, MISTRA EMNS, Strasse + Verkehr, 1-2/2013, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2013

Th. Hermann, B. Adey, N. Schindele, J. Lüking, R. Hajdin, Bewertung des Nutzens von Erhaltungsmassnahmen, Strasse + Verkehr, 11/2008, VSS (Association of Swiss Road and Traffic Engineers), Zurich, 2009.

R. Hajdin, Road Structure Management in Switzerland, Proceedings of the 2nd International Workshop on Lifetime Engineering of Civil Infrastructure, Systems Design Laboratory, Yamaguchi University, Yamaguchi, 2008.

R. Hajdin, How much management does the preservation of bridges need? (Wie viel Management braucht die Brückenerhaltung?), SIA (Society of Swiss Engineers and Architects) Documentation D014 (in German), 1996.

B. Schleich, R. Hajdin, J. Grob, Utilization, Safety and Monitoring Plan; Example: Excavation pit (Nutzungs- /Sicherheits- /Kontrollplan; Beispiel: Baugrube), Schweizer Ingenieur und Architekt Nr. 7/92, 1992 (in German).

R. Hajdin, Computer Aided Development of Stress Fields for Reinforced Concrete Panels (Computerünterstützte Entwicklung von Spannungsfeldern für Stahlbetonscheiben), German Committee for Reinforced Concrete, Research Colloquium (Deutsche Ausschuss für Stahlbeton, Forschungskolloqium), Zurich (in German), 1990.