

Rabe ALSAFADIE

CONTACT INFORMATION	Structural and Earthquake Engineering Department HIESR Higher Institute of Earthquake Studies and Research Damascus University Damascus, Syria	<i>Phone: +963 (0) 95 74 05 480</i> <i>Email: rabe.alsafadie@gmail.com</i>
PERSONAL DETAILS	Nationality: Syrian Gender: Male Date of Birth: 29/Septembre/1977	
OBJECTIVE	Placement in a post-doctoral or academic faculty research position	
INTEREST DOMAINS	Computational mechanics: Static and dynamic structural analysis. Conventional and computer aided structural analysis. Nonlinear structural analysis. Numerical analysis and computational methods. Limit states design. Seismic design and retrofitting of Reinforced Concrete structures. Resistant design for impulsive loads (impact and blast).	
KEY EXPERIENCE	At University Teaching the following courses: Engineering Mechanics - Statics, Mechanics of Materials, Structural Analysis, Finite Element Method, Structural Dynamics, Earthquake Engineering, Shell Structures Analysis. Scientific Research in the following fields: Structural Dynamics, Earthquake Engineering, Nonlinear Structural Analysis. Administrative experience includes: Head of the Structural and Seismic Engineering department at HIESR, Coordinator for the Post Graduate Programs for Structural and Seismic Engineering at Higher Institute of Earthquake Studies and Research, Damascus University. Associate Chair for the Civil and Environmental Engineering Program at Yarmouk Private University. Serve on a variety of campus committees at various levels of capacity with several of them acting as the chair. As a Professional Structural Civil Engineer Registered professional engineer As an Expert on Seismic Design of Reinforced Concrete Structures Give lectures, professional seminars, training courses, short courses, and workshops about seismic design of tall reinforced concrete buildings in Syrian Civil Engineers Union.	
EDUCATION	Institut National des Sciences Appliquées de Rennes , Brittany, FRANCE Royal Institute of Technology, KTH , Stockholm, SWEDEN Ph.D., Laboratory of Civil and Mechanical Engineering	

- Thesis Topic: “*Displacement and Mixed-based Finite Element Formulations for Three-dimensional Corotational Beams*”
- Area of Study: Structural Mechanics

Institut National des Sciences Appliquées de Rennes, Brittany, FRANCE

Master 2, IMGC, Civil and Mechanical Engineering Research Master, August 2006

- Thesis Topic: “*Thin-Walled Beams Undergoing Moderate Displacements*”
- Area of Study: Structural Mechanics

Poitiers University, Poitiers, FRANCE

Master 2, MSI, Engineering Mechanics of Solids Research Master, August 2005

Damascus University, Damascus, SYRIA

B.S., Civil Engineering, July 2000

- First Graduate Student in Civil Engineering
- Structural Engineering specialization

HONORS AND
SCIENTIFIC
DISTINCTION

INSA de Rennes, Brittany, FRANCE

- First Postgraduate Student in Civil and Mechanical Engineering Research Master, 2006

BGF-BGE France-Syria Bilateral Program for Postgraduate Scholarships

- Scholarship to study in France in order to obtain a PhD degree in Civil Engineering, September 2004 to August 2010

Damascus University, Damascus, Syria

- Albassel Certificate for the First Graduate Student at Damascus University, 2000
Rank: First
Area of Study: Structural Engineering
- Albassel Certificate for Study’s Distinction, 1999
Highest Undergraduate Academic Award in Syria
Rank: Third
Area of Study: Structural Engineering
- Albassel Certificate for Study’s Distinction, 1997
Highest Undergraduate Academic Award in Syria
Rank: First
Area of Study: Civil Engineering

Tishreen University, Latakia, Syria

- Albassel Certificate for Study’s Distinction, 1996
Highest Undergraduate Academic Award in Syria
Rank: First
Area of Study: Civil Engineering

ACADEMIC
EXPERIENCE

Higher Institute of Earthquake Studies and Research, HIESR, Damascus, SYRIA

Head of Structural and Seismic Engineering Department **August 2013 to present**

- Manage and coordinate postgraduate program (Master + PhD)
- Lecture Advanced Structural Analysis, Advanced Structural Dynamics and Earthquake Engineering.

Civil Engineering Faculty, Yarmouk Private University, Damascus, SYRIA

Lecturer

October 2012 to present

- Lecture Advanced Structural Analysis, Shell Analysis, Structural Dynamics, Earthquake Engineering.

Civil Engineering Faculty, Damascus University, Damascus, SYRIA

Lecturer

December 2010 to present

- Member of Structural Engineering Department.
- For Undergraduate Studies: Lecture Mechanics of Materials, Structural Analysis, Structural Dynamics.
- For Postgraduate Studies: Lecture Advanced Structural Analysis, Finite Element Method.

Institut National des Sciences Appliquées de Rennes, Brittany, FRANCE

Teaching Assistant

January 2010 to November 2010

- Instructor for GCU06-22: Mechanics of Deformable Solids/Elasticity II, Practical Work
 - 24 sections where each section consists of 3 to 4 students
 - Responsible for supervision of 4 hour laboratory work where 3rd year undergraduate students learn how to experimentally and analytically verify and validate the Elasticity Theory. In particular, the students measure the strain and stress distribution of plexiglas plate structures by some benchmark tests like the photoelasticity and the moiré effect etc.
 - Developed supplementary course material
- Instructor for GCU06-24: Beam Theory II, Practical Work Laboratory
 - 24 sections where each section consists of 3 to 4 students
 - Responsible for supervision of 4 hour laboratory work where 3rd year undergraduate students learn how to do experiments involving tension test, verify the stress-strain diagram, ultimate strength, torsion tests, determine the modulus of shear, do displacement tests on beams with various supports, statically indeterminate beams, determine the modulus of elasticity and Poisson's ratio, etc.
 - Developed supplementary course material

Graduate Student

September 2005 to September 2010

- BGF-BGE France-Syria Bilateral Program for Postgraduate Scholarships
Includes M.S. and Ph.D. research and course work.

Poitiers University, Poitiers, FRANCE

Graduate Student

September 2004 to August 2005

- BGF-BGE France-Syria Bilateral Program for Postgraduate Scholarships
Includes M.S. research and course work.

Damascus University, Damascus, SYRIA

Teaching Assistant

September 2000 to July 2004

- Member of Department of Structural Engineering.

- Lectured weekly laboratory work on Mechanics of Materials I and Mechanics of Materials II for 2nd year civil engineering students.
- Lectured weekly practical problems on Structural Analysis for 3ed year civil engineering students.
- Lectured weekly practical problems on Mechanics of Structures for 4th year structural engineering students.
- Graded weekly lab reports and provided laboratory exams.

Undergraduate Student

September 1995 to June 2000

Formation Eorocode3 15-19 septembre 2008 universite de Liege et l INSA de Rennes

PUBLICATIONS

Alsafadie R, Hjjaj M, Battini J-M, Somja H. A comparative study of displacement and mixed-based corotational finite element formulations for elasto-plastic three-dimensional beam analysis *Engineering Computations: International Journal for Computer-Aided Engineering and Software*. Volume 28, Issue 7, July 2011, Pages 939-982. doi:10.1108/02644401111165149

Alsafadie R, Battini J-M, Hjjaj M. Efficient local formulation for elasto-plastic corotational thin-walled beams. *International Journal for Numerical Methods in Biomedical Engineering*. Volume 27, Issue 4, April 2011, Pages: 498-509. doi:10.1002/cnm.1311

Alsafadie R, Hjjaj M, Battini J-M. Three-dimensional formulation of a mixed corotational thin-walled beam element incorporating shear and warping deformation. *Thin-Walled Structures*. Volume 49, Issue 4, April 2011, Pages 523-533. doi:10.1016/j.tws.2010.12.002.

Alsafadie R, Battini J-M, Somja H, Hjjaj M. Local formulation for elasto-plastic corotational thin-walled beams based on higher-order curvature terms. *Finite Elements in Analysis and Design*. Volume 47, Issue 2, February 2011, Pages 119-128. doi:10.1016/j.finel.2010.08.006

Alsafadie R, Hjjaj M, Battini J-M. Corotational mixed finite element formulation for thin-walled beams with generic cross-section. *Computer Methods in Applied Mechanics and Engineering*. Volume 199, Issues 49-52, 15 December 2010, Pages 3197-3212. doi:10.1016/j.cma.2010.06.026

Alsafadie R, *Displacement and Mixed-based Finite Element Formulations for Three-dimensional Corotational Beams*. Doctoral thesis, Université Européenne de Bretagne (UEB), INSA de Rennes, ECOLE DOCTORALE SCIENCES DE LA MATIÈRE (SDLM), Brittany, France, October 2010.

Alsafadie R, *Thin-Walled Beams Undergoing Moderate Displacements*. Master's thesis, INSA de Rennes, Brittany, France, 2006.

CONFERENCES
AND
PRESENTATIONS

Alsafadie R., Hjjaj M, Battini J-M. Corotational mixed three-dimensional finite element for structural stability problems. In: *Proceedings of the ECCM 2010 "IV European Conference on Computational Mechanics": Solids, Structures and Coupled Problems in Engineering*, Paris, France, May 16–21, 2010. Full paper.

Alsafadie R., Hjjaj M, Battini J-M. Stability analysis of 3D frames using a mixed corotational formulation. In: *Proceedings of SDSS' Rio 2010 "International Colloquium on Stability and Ductility of Steel Structures"*, Rio de Janeiro, Brazil, September 8–10, 2010. Full paper.

Alsafadie R., Battini J-M, Hjjaj M. Mise au point d'une formulation locale efficace pour l'analyse élasto-plastique de poutre tridimensionnelle corotationnelle à parois minces. In: *Journée des doctorants "Ecole Doctorale Sciences de la Matière"*, Université de Rennes 1, Rennes, France, December 9, 2009.

Alsafadie R. Formulation d'ordre supérieur pour l'analyse inélastique des poutres corotationnelles à parois minces. In: *Journée Scientifique Jeunes Chercheurs MMS "Mesure, Modélisation et Simulation"*, Université Européenne de Bretagne (UEB), France, June 24, 2010.

Alsafadie R. Corotational Beam Finite Element Formulations. *Schlumberger Cambridge Research Center SCR*, Cambridge, United Kingdom, July 5, 2010.

SUPERVISION

Supervising the master degree (MSc) research work of many postgraduate students within the Higher Institute of Earthquake Studies and Research (HISER) in the fields of Structural Dynamics and Earthquake Engineering.

Assessment of Dynamic Properties of Higher Education Ministry Building Using Microtremors Measurements. MSc dissertation, 2015, by Sana Hosein HASAN

REVIEWER FOR
JOURNALS

- *Research Journal of Damascus University, Seismic and Structural Engineering Science Series* September 2013 to present
- *Journal of Structural Engineering, American Society of Civil Engineers* August 2008 to August 2009 **Mars 2013 to present**

REFERENCES

Prof. Jean-Marc Battini, jean-marc.battini@mech.kth.se

KTH Royal Institute of Technology, Department of Civil and Architectural Engineering, Stockholm, Sweden

Prof. Mohammed Hjjaj, Mohammed.Hjjaj@insa-rennes.fr

INSA de Rennes, Department of Civil Engineering, Rennes, France

Prof. Hugues Somja, Hugues.Somja@insa-rennes.fr

INSA de Rennes, Department of Civil Engineering, Rennes, France

TECHNICAL
SKILLS

MATLAB experience: linear algebra, nonlinear numerical methods, polynomials, visualization

Computer Algebra Systems: Maple, Mathematica, Mathcad

Software for Finite Elements Analysis: CSI SAP2000

Computer Applications: T_EX (L^AT_EX, B_IB_TE_X, B_EA_ME_R), most common productivity packages for Windows

Software for Professional Structural Analysis & Design: CSI Etabs, CSI Safe, Robot Structural Analysis

LANGUAGES

Arabic mother tongue

English fluent (speaking, reading, writing)

French fluent (speaking, reading, writing)

German excellent command, highly proficient in speaking, reading; basic in writing