CURRICULUM VITAE

PERSONAL DATA

Name:	LEBENSOHN, Ricardo Anibal
Citizenship:	USA
Address:	MST8 - MS 755 - LANL - Los Alamos, NM, 87545, USA
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PRESENT POSITIONS

Since 2003:	Scientist. Materials Science and Technology Division, Los Alamos National Laboratory (LANL), Los Alamos, NM, USA. Present Category: Scientist 4 (since 2011).
Since 2013:	Team Leader. Mechanical Modeling Team, Materials Science in Radiation and Dynamics Extremes (MST-8) Group, LANL. Team: 10 scientists/postdocs/students.
2013-1016:	Principal Investigator. LANL's FY14 Laboratory-Directed Research and Development-Directed Research (LDRD-DR): "Mesoscale materials science of ductile damage in four dimensions: towards the computational design of damage-tolerant materials". Team: 8 scientists and 4 postdocs/students. Funding level: $1.6M/year.

EDUCATION

1989 - 1993:	PhD in Physics, *Facultad de Ciencias Exactas, Ingeniería y Agrimensura* (FCEIA, College of Science, Engineering and Surveying), *Universidad Nacional de Rosario* (UNR, National University of Rosario), Argentina.
1982 - 1988:	*Licenciado en Física* (equivalent to BSc+MSc in Physics), UNR, Rosario, Argentina.
1981 - 1982:	Elementary Education Teaching Certificate, *Escuela Normal 3*, Rosario, Argentina.

LANGUAGES

Mother Tongue: SPANISH.
Fluent in ENGLISH and FRENCH.

PREVIOUS ACADEMIC AND SCIENTIFIC POSITIONS

2001:	Long-term Visiting Staff Member, LANL, Los Alamos, USA.
1999 - 2000:	Provost for Science and Technology, *Universidad Nacional de Rosario*, Argentina.
1997 - 2003:	Researcher of CONICET (National Research Council of Argentina), *Instituto de Física Rosario* (IFIR, Rosario Physics Institute).
1995 - 2003:	Professor, Physics Department, UNR.

1995 - 2003:	Researcher of UNR's Research Council at IFIR.
1994:	Postdoc, *Laboratoire Génie Physique et Mécanique de Matériaux* (GPM2), Grenoble, France.
1989 - 1993:	Doctoral Scholarship of CONICET, IFIR, Rosario, Argentina.
1988 - 1993:	Teaching Assistant at UNR, Rosario, Argentina
1983 - 1988:	Elementary Teacher, *Escuela Nocturna para Adultos 12* (Evening School for Adult Literacy), Rosario, Argentina.

VISITING POSITIONS

For periods between 1 and 6 months:

2017:	Danish Technical University, Lyngby, Denmark (Otto Mønsted Visiting Professor).
2013:	*Université de Lorraine*, Metz, France.
2012:	*Fraunhofer-Institut für Werkstoffmechanik*, Freiburg, Germany.
2011, 2007:	*Laboratoire de Mécanique et d'Acoustique*, Marseille, France.
2010:	*Max-Planck-Institut für Eisenforschung*, Düsseldorf, Germany (Humboldt Awardee).
2008:	*Université de Aix-Marseille III*, Marseille, France.
2008:	*Instituto Madrileño de Estudios Avanzados* (IMDEA-Materiales), Madrid, Spain.
2006, 2002:	*Université Paris-Nord*, Villetaneuse, France.
2005:	*Ecole Polytechnique*, Palaiseau, France.
2000, 1998:	Los Alamos National Laboratory, Los Alamos, USA.
2000, 1999:	*Centre de Mise en Forme* (CEMEF), Sophia-Antipolis, France
1999:	Department of Mechanical & Aerospace Engineering, Cornell University, Ithaca, USA.
1998, 1996, 1995:	*Technische Universitat Hamburg-Harburg*, Hamburg, Germany.
1997:	Department of Geology and Geophysics, University of California, Berkeley, USA (Fulbright Scholar).
1995, 1994:	RISØ National Laboratory, Roskilde, Denmark.

AWARDS

2016: Otto Mønsted Visiting Professorship at the Danish Technical University (DTU), Otto Mønsted Foundation, Denmark.

2011: Defense Programs Award of Excellence, National Nuclear Security Administration (NNSA), USA, as part of the Process Engineering and Design for Improved Component Testing (PREDICT) team, "in recognition of significant achievements in quality, productivity, cost savings, safety, or creativity in support of NNSA's programs". In the case of the PREDICT team "for achievements in physics-based uranium component modeling".

2010: Humboldt Research Award for Senior US Scientists, Humboldt Foundation, Germany, in recognition to scholars whose fundamental discoveries, new theories, or insights have had a significant impact on their own discipline". In the case of Dr. Lebensohn: "for pioneering work in the field of multiscale modelling of plasticity of crystalline materials".

1997: Fulbright Scholarship Award. Department of Geology and Geophysics, University of California, Berkeley, USA.

RESEARCH INTERESTS

Mechanics of Materials. Computational Mechanics. Solid Mechanics. Micromechanics. Polycrystal Plasticity. Dilatational Plasticity. Strain-gradient Plasticity. Homogenization. Spectral Methods. Multiscale Material Modelling. Texture, Anisotropy, Microstructure and Damage Evolution of Metals, Minerals and Polymers. X-Ray Diffraction. High Energy Diffraction Microscopy. Neutron Diffraction. Residual Stresses. Finite Element Analysis. Metal Forming. Dynamic Properties of Materials.

PUBLICATIONS AND PRESENTATIONS

- 6 book chapters (full list given below).
- 113 articles in peer-reviewed international journals (full list given below).
- 51 articles in proceedings of international conferences (full list given below).
- 8 technical/industrial reports.
- 81 invited lectures in international conferences and research institutions (full list below).
- 200+ contributed presentations in international conferences.

BIBLIOMETRIC INDICATORS

- Web of Science/ResearcherID (see www.researcherid.com/rid/A-2494-2008): 4400+ citations, h-index=33. Papers contributing to this h-index, with # of citations, are indicated in the full list of peer-reviewed articles given below.
- Google Scholar (see http://scholar.google.com/citations?user=eLtHiCwAAAAJ): 6100+ citations, h-index=43.
- One of our papers (R.A. Lebensohn and C.N. Tomé, Acta Metall. Mater. 41, 2611, 1993) is top-20 most-cited article (~1000 in Web of Science, 1200+ in Google Scholar) in Acta Materialia since the journal's inception in 1953.
- 5 highly-cited recent papers (top 1% Engineering field) according to Essential Science Indicators, indicated in the full list of peer-reviewed articles given below.

PROFESSIONAL AND ACADEMIC SERVICE

1. Editorial Board: Member of the Editorial Board of International Journal of Plasticity.

2. Referee: For the following international journals: Acta Materialia; Scripta Materialia; Philosophical Magazine; Modelling and Simulation in Material Science and Engineering; Nature; Journal of Applied Crystallography; Journal of the Mechanics and Physics of Solids; Proceedings of the Royal Society of London A; Material Science and Engineering; International Journal of Solids and Structures; Journal of Materials Science; Journal of Nuclear Materials; Computational Materials Science; Archives of Mechanics; Mechanics of Materials; Computers, Materials and Continua; Journal of Applied Physics; Applied Physics Letters; European Journal of Mechanics A/Solids; International Journal of Plasticity; Computational Methods in Applied Mechanics and Engineering; Journal of ASTM International; Journal of Materials Research; Journal of the Minerals, Metals and Materials Society (JOM); Journal of Applied Mechanics; Procedia IUTAM; International Journal of

Engineering Science; International Journal of Mechanical Sciences; International Journal for Numerical Methods in Engineering; Proceedings of the French National Academy of Sciences (CRAS) Mechanics; Metallurgical and Materials Transactions A; Engineering Fracture Mechanics; ASME Journal of Engineering Materials and Technology; Materials Research Letters; The Cryosphere.

3. Guest Editor: Special Issue: "Polycrystal Modeling with Experimental Integration", Modeling and Simulation in Materials Science and Engineering, January 2012.

4. Reviewer of Research Proposals and Activities: For the following agencies: *USA:* National Science Foundation (NSF), Stewardship Science Academic Alliances Program (SSAAP), Army Research Office (ARO), Nuclear Energy University Programs (NEUP); *France:* National Research Agency (ANR); *Argentina:* National Agency of Promotion of Science and Technology (ANPCyT), National Research Council (CONICET); *South Africa:* National Research Foundation (NRF); *Chile:* National Fund for Scientific and Technological Development (FONDECYT); *Belgium:* Flanders Research Foundation (FWO); *Switzerland:* Swiss National Science Foundation (SNF).

5. Evaluation Panels: "Materials: Discovery Science to Strategic Applications", Science/Engineering Advisory Panel (SAP), LDRD Program, LANL (2011); "Computational and Numerical Methods" Review Team, LDRD Program (2014); "Trinity Science" Review Team, LDRD Program (2015); "Matter in Extremes", Subject Matter Expert, LDRD Program (2015); "Metals and Metallic Nanostructures (MMN)", Division of Materials Research (DMR), NSF (2016).

6. Advisory Board: Theory, Modelling and Computation (TMC) Board of Directors, for LANL's Matter-Radiation Interactions in Extremes (MaRIE) future Light Source experimental facility, since 2015.

7. Search Committees: Member of LANL's Center for Non-Linear Studies (CNLS) Director Search Committee, 2014; MST-8 Group Leader Search Committee, 2014.

8. Symposia Organizer: Computational homogenization of single and multi-phase polycrystalline aggregates, IV European Congress on Computational Mechanics, Paris, May 2010; Polycrystal modelling with experimental integration, 2011 TMS Annual Meeting, San Diego, CA, USA, February 2011; Multiscale modeling of polycrystalline materials. European Solids Mechanics Conference, Madrid, Spain, July 2015; Thematic Session Chair, Computational Solid Mechanics, 24th International Congress of Theoretical and Applied Mechanics (ICTAM 2016), Montréal, Canada, August 2016.

9. Scientific Committees: International Congress on 3D Materials Science (3DMS 2014, Annecy, France, 2014; 3DMS 2016, St. Charles, IL, USA, 2016); International Workshop on Computational Mechanics of Materials (IWCMM24, Getafe, Spain, 2014; IWCMM25, Bochum, Germany, 2015).

10. PhD and Habilitation Committees: *Université de Aix-Marseille*, France; *Université Joseph Fourier*, Grenoble, France; *Ecole Centrale de Lille*, France; Queen's University, Canada; *Katholieke Universteit Leuven*, Belgium; *Université de Nice*, France; *Université de Montpellier*, France; Carnegie-Mellon University; Caltech; RWTH Aachen University; *Université de Lorraine*, France; Purdue University.

11. Faculty/Scientist Promotion Evaluation: Universidad Nacional de Rosario (Argentina); *Commissariat à l'Energie Atomique* (CEA) (France); National Fund for Scientific Research (FSR-FNRS) (Belgium); Purdue University (USA); University of Thessaly (Greece).

12. Academic Councils: Member of the University Council, *Universidad Nacional de Rosario* (UNR), Rosario, Argentina, alumni representative (1992); College of Engineering and Sciences Council (UNR), student representative (1987-1988), and faculty representative (1998-2003); Physics Department Council (UNR), faculty representative (1995-1998).

TEACHING

1- Elementary Education: *1983-1988:* Elementary Teacher, Evening School for Adult Literacy, Rosario, Argentina.

2- Regular University Courses: *1988-2003:* Universidad Nacional de Rosario, Argentina. *Undergraduate Courses:* Mathematical Analysis, Numerical Analysis and Computational Methods, General Physics, Thermodynamics, Physical Chemistry. *Graduate Courses:* Crystallographic Textures of Materials, Modeling Mechanical Properties of Materials.

3- Summer School and Short Graduate Courses: *2015:* "Self-consistent and spectral polycrystal plasticity modelling", International Institute for Multifunctional Materials for Energy Conversion (IIMEC) Summer School on Computational Materials Science, Texas A&M University, College Station, TX; "In-situ 3-D measurement and FFT-based modelling of microstructure evolution of polycrystalline materials", 11th LANSCE School on Neutron Scattering Materials at the Mesoscale", Los Alamos Neutron Science Center. Los Alamos, NM. *2010:* "Polycrystal Plasticity". Ecole Thématique Changement d'Echelles en Mécanique de Matériaux", Briançon, France; "Crystal plasticity and FFT-based calculations". MECAMAT Mechanics of Materials School, Aussois, France. *2009:* "Polycrystal modelling and VPSC training". Graduate Institute of Ferrous Technology (GIFT), Pohang University of Science and Technology (POSTECH), Pohang, South Korea. *2008:* "Homogenization-based polycrystal plasticity models". Madrid Institute for Advanced Studies, Madrid, Spain; "Polycrystal modelling", Summer School on Texture, Pittsburgh, PA. *2006:* "Modelling mechanical behavior of viscoplastic polycrystals". 2nd Marie Curie Summer School on Knowledge-based Materials, Alvdalen, Sweden.

SCIENTIFIC COMPUTER CODES

1. R.A. Lebensohn and C.N. Tomé: Viscoplastic Self-Consistent code (VPSC), LANL Classification Office # LA-CC-99-72. VPSC is a mean-field polycrystal plasticity code for the prediction of mechanical response and microstructure evolution of polycrystalline aggregates. The VPSC code has been distributed to more than 300 users in Academia, R&D Laboratories and Industry.

2. R.A. Lebensohn: Viscoplastic and elasto-viscoplastic Fast Fourier Transform-based codes (VPFFT, EVPFFT) # LA-CC-11-003. VPFFT and EVPFFT are full-field polycrystal plasticity codes, ideally suited for direct numerical simulation from microstructural images measured by emerging material characterization techniques.

BOOK CHAPTERS

6. R.A. Lebensohn: "Elastic and viscoplastic properties". Chapter 11 of: *State-of-the-art Report of Techniques for Fuel Modelling.* OECD/NEA Working Party on Multi-scale Modelling of Fuels and Structural Materials for Nuclear Systems (2015).

5. R.A. Lebensohn, P. Ponte Castañeda, R. Brenner and O. Castelnau: "Full-field vs. homogenization methods to predict microstructure-property relationships of polycrystalline materials". Chapter 11 of *Computational Methods for Microstructure-Property Relationships*. S Ghosh and D. Dimiduk (Eds.), Springer, pp. 393-441 (2011).

4. A.D. Rollett, S. Lee, and R.A. Lebensohn: "3D image-based viscoplastic response with crystal plasticity". Chapter 15 of *Microstructure and Texture in Steels,* A. Haldar, S. Suwas, D. Bhattacharjee (Eds.), Springer, pp. 255-263 (2009).

3. N. Barton, J.V. Bernier, R.A. Lebensohn and A.D. Rollett: "Direct 3D simulation of plastic flow from EBSD data". Chapter 11 of *Electron Backscatter Diffraction in Materials Science, 2nd Edition.* J. Schwartz, M. Kumar, B.L. Adams and D.P. Field (Eds.), Springer, pp. 155-168 (2009).

2. O. Castelnau, D.K. Blackman, R.A. Lebensohn and P. Ponte Castañeda: "Earth mantle rheology inferred from homogenization theories". Chapter 4 of *Bridging Computational Scales: from Microstructure to Macroscale Properties*. O. Cazacu and P. Franciosi (Eds.), Hermes/Willey, pp. 55-70 (2008).

1. C.N. Tomé and R.A. Lebensohn: "Self-consistent homogeneization methods for texture and anisotropy". Chapter 18 of *Continuum Scale Simulation of Engineering Materials: Fundamentals, Microstructures, Process Applications.* D. Raabe, F. Roters, F. Barlat and L.-Q. Chen (Eds.), Willey, pp. 352-378 (2004).

ARTICLES IN PEER-REVIEWED INTERNATIONAL JOURNALS

114. C. Garcia-Cardona, R.A. Lebensohn and M. Anghel: "Parameter estimation in a thermoelastic composite problem via adjoint formulation and model reduction", International Journal of Numerical Methods in Engineering, in revision.

113. R.A. Lebensohn and A. Needleman: "Numerical implementation of non-local polycrystal plasticity using Fast Fourier Transforms". Journal of the Mechanics and Physics of Solids, in press. DOI: 10.1016/j.jmps.2016.03.023

112. C.F. Chen, R. Pokharel, M.J. Brand, E.L. Tegtmeier, B. Clausen, D.E. Dombrowski, T.L. Ickes and R.A. Lebensohn: "Processing and Consolidation of Copper/Tungsten". Journal of Materials Science 52, pp. 1172-1182 (2017).

111. P. Kaercher, L. Miyagi, W. Kanitpanyacharoen, E. Zepeda-Alarcon, Y. Wang, D. Parkinson, R.A. Lebensohn, F. De Carlo and H.R. Wenk: "Two-phase deformation of lower mantle mineral analogs". Earth and Planetary Science Letters 456, pp. 134-145 (2016).

110. M.V. Upadhyay, S. Van Petegem, T. Panzner, R.A. Lebensohn and H. Van Swygenhoven: "Study of lattice strain evolution during biaxial deformation of stainless steel using a finite element and fast Fourier transform based multiscale approach". Acta Materialia 118, pp. 28-43 (2016).

109. M.-G. Llorens, A. Griera, P.D. Bons, R.A. Lebensohn, L. Evans, D. Jensen and I. Weikusat: "Full-field predictions of ice dynamic recrystallisation under simple shear conditions". Earth and Planetary Science Letters 450, pp. 233-242 (2016).

108. E. Lieberman, R.A. Lebensohn, D.B. Menasche, C.A. Bronkhorst and A.D. Rollett: "Microstructural effects on damage evolution in shocked copper polycrystals". Acta Materialia 116, pp. 270-280 (2016).

107. M.V. Upadhyay, L. Capolungo, V. Taupin, C. Fressengeas and R.A. Lebensohn: "A higher order elasto-viscoplastic model using fast Fourier transforms: effects of lattice curvatures on mechanical response of nanocrystalline metals". International Journal of Plasticity 83, pp. 126-152 (2016).

106. M. Knezevic, M. Zecevic, I.J. Beyerlein and R.A. Lebensohn: "A numerical procedure enabling accurate descriptions of strain rate-sensitive flow of polycrystals within crystal visco-plasticity theory". Computer Methods in Applied Mechanics and Engineering 308, pp. 468-482 (2016).

105. M.-G. Llorens, A. Griera, P.D. Bons, J. Roessiger, R. Lebensohn, L. Evans and I. Weikusat: "Dynamic recrystallization of ice aggregates during co-axial viscoplastic deformation: a numerical approach". Journal of Glaciology 62, pp. 359-377 (2016).

104. B.M. Morrow, R.A Lebensohn, D.T. Martinez, C.P. Trujillo, F.L. Addessio, C.A. Bronkhorst, T. Lookman and E.K. Cerreta: "Characterization and modelling of mechanical behavior of single crystal titanium deformed by split Hopkinson pressure bar", International Journal of Plasticity 82, pp. 225-240 (2016).

103. G. Stevens, S. Atamturktur, R.A. Lebensohn and G. Kaschner: "Experiment-based validation and uncertainty quantification of coupled multi-scale plasticity models". Multidiscipline Modeling in Materials and Structures 12, pp. 151-176 (2016).

102. A.W. Mello, A. Nicolas, R.A. Lebensohn and M.D. Sangid: "Microstructure based strain localization within a 7050 Aluminum alloy: comparison of experiments and modeling in various textures". Materials Science and Engineering A 661, pp. 187-197 (2016).

101. R.A. Lebensohn, M. Zecevic, M. Knezevic and R.J. McCabe: "Average intragranular misorientation trends in polycrystalline materials predicted by a viscoplastic self-consistent approach", Acta Materialia 104, pp. 228-236 (2016).

100. T. Ozturk, C. Stein, R. Pokharel, C. Hefferan, H. Tucker, S. Jha, R. John, R.A. Lebensohn, P. Kenesei, R.M. Suter and A.D. Rollett: "Simulation domain size requirements for elastic response of 3-D polycrystalline materials". Modelling and Simulation in Materials Science and Engineering 24, 015006 (13pp) (2016).

99. C.W. Sinclair, G. Martin and R.A. Lebensohn: "Factors contributing to plastic strain amplification in slip-dominated deformation of magnesium alloys". Modelling and Simulation in Materials Science and Engineering 23, 085002 (17pp) (2015).

98. A. Rovinelli, R.A. Lebensohn and M.D. Sangid: "Influence of microstructure variability on short crack behavior through postulated micromechanical short crack driving force metrics". Engineering Fracture Mechanics 138, pp. 265-288 (2015).

97. E. Lieberman, A.D. Rollett, R.A. Lebensohn and E.M. Kober: "Calculation of grain boundary normals directly from 3-D microstructure images". Modelling and Simulation in Materials Science and Engineering 23, 035005 (18pp) (2015).

96. S. Atamturktur, J. Hegenderfer, B. Williams, M. Egeberg, R.A. Lebensohn and C. Unal: "A resource allocation framework for experiment-based validation of numerical models". Mechanics of Advanced Materials and Structures 22, 641-654 (2015).

95. A. Prakash, W. Nohring, R.A. Lebensohn, H.W. Hoppel and E. Bitzek: "Finite element simulation of the accumulative roll bonding process using an embedded texture model". Materials Science and Engineering A 631, pp. 104-119 (2015).

94. N. Chandola, R.A. Lebensohn, B. Revil-Baudard, O. Cazacu, R.K. Mishra and F. Barlat: "Combined effects of anisotropy and tension-compression asymmetry on the torsional response of AZ31 Mg". International Journal of Solids and Structures 58, pp. 190-200 (2015).

93. L. Chen, J. Chen, R.A. Lebensohn, Y.Z. Ji, T. W. Heo, S. Bhattacharyya, K. Chang, S. Mathaudhu, Z.K. Liu and L.Q. Chen: "An integrated fast Fourier transform-based phase-field and crystal plasticity approach to model recrystallization of three dimensional polycrystals". Computer Methods in Applied Mechanics and Engineering 285, pp. 829-848 (2015).

92. M. Arul Kumar, A.K. Kanjarla, S. Niezgoda, R.A. Lebensohn and C.N. Tomé: "Numerical study of the stress state of a deformation twin in magnesium", Acta Materialia 84, pp. 349-358 (2015).

91. R. Pokharel, J. Lind, S.F. Li, P. Kenesei, R.A. Lebensohn, R.M. Suter and A.D. Rollett: "In-situ observation of bulk 3-D microstructure evolution of polycrystalline Cu using synchrotron radiation". International Journal of Plasticity 67, pp. 217-234 (2015).

90. N.R. Barton, J.V. Bernier, R.A. Lebensohn and D.E. Boyce: "The use of discrete harmonics in direct multi-scale embedding of polycrystal plasticity". Computer Methods in Applied Mechanics and Engineering 283, 224-242 (2015).

89. R. Vasin, R.A. Lebensohn, S. Matthies, C.N. Tomé and H.R. Wenk: "The influence of grain shape and volume fraction of sheet silicates: biotite platelets in an isotropic matrix". Geophysics 79, pp. D433–D441 (2014).

88. J.P. Escobedo, E.K. Cerreta, D.T. Martinez, C.P. Trujillo, R.A. Lebensohn and G.T. Gray III: "Influence of temperature on the dynamic tensile behavior of zirconium". Metallurgical and Materials Transactions A 45, pp. 5877-5882 (2014).

87. J. Galán, P. Verleysen and R.A. Lebensohn: "An improved algorithm for the polycrystal viscoplastic self-consistent model and its integration with implicit finite element schemes". Modelling and Simulation in Materials Science and Engineering 22, 055023 (18pp) (2014).

86. P. Madrid, D. Sulsky and R.A. Lebensohn: "Uncertainty quantification in prediction of the in-plane Young's modulus of thin films with fiber texture". Journal of Microelectromechanical Systems 23, pp. 380-390 (2014).

85. G. Martin, C.W. Sinclair and R.A. Lebensohn: "Microscale plastic strain heterogeneity in slip dominated deformation of of a magnesium alloy containing rare-earth". Materials Science and Engineering A 603 pp. 37-51 (2014).

84. B.S. Anglin, R.A. Lebensohn and A.D. Rollett: "Validation of a numerical method based on fast Fourier transforms for heterogeneous thermoelastic materials by comparison with analytical solutions". Computational Materials Science, 87, pp. 209-217 (2014).

83. R. Pokharel, J. Lind, A.K Kanjarla, R.A. Lebensohn, S.F. Li, P. Kenesei, R.M. Suter and A.D. Rollett: "Polycrystal plasticity: comparison between grain scale observations of deformation and simulations". Annual Review of Condensed Matter Physics 5, pp. 317-346 (2014).

82. R.A. Lebensohn and R. Pokharel: "Interpretation of microstructural effects on porosity evolution using a combined dilatational/crystal plasticity computational approach". Journal of the Minerals, Metals and Materials Society (JOM) 66, pp. 437-443 (2014).

81. M. Montagnat, O. Castelnau, P. Bons, S. Faria, O. Gagliardini, F. Gillet-Chaulet, F. Grennerat, A. Griera, R.A. Lebensohn, H. Moulinec, J. Roessiger and P. Suquet: "Multiscale modeling of ice deformation behavior". Journal of Structural Geology 61, pp. 78-108 (2014).

80. R.A. Lebensohn, J.P. Escobedo, E.K. Cerreta, D. Dennis-Koller, C.A. Bronkhorst and J. Bingert: "Modelling void growth in polycrystalline materials". Acta Materialia 61, pp. 6918-6932 (2013).

79. O. Cazacu, B. Revil-Baudard, R.A. Lebensohn and M. Garajeu: "On the combined effect of pressure and third invariant on yielding of porous solids with von Mises matrix". Journal of Applied Mechanics 80, 064501 (2013).

78. M. Knezevic, R.J. McCabe, R.A. Lebensohn, C.N. Tomé, C. Liu and B. Mihaila: "Integration of self-consistent polycrystal plasticity with dislocation density based hardening laws within an implicit finite element framework: application to low-symmetry metals". Journal of the Mechanics and Physics of Solids 61, pp. 2034-2046 (2013). *49 citations in Web of Science (WoS), highly cited paper in Essential Science Indicators (ESI).*

77. A.W. Richards, R.A. Lebensohn and K. Bhattacharya: "Interplay of martensitic phase transformation and plastic slip in polycrystals". Acta Materialia 61, pp. 4384-4397 (2013).

76. P. Eisenlohr, M. Diehl, R.A. Lebensohn and F. Roters: "A spectral method solution to crystal elasto-viscoplasticity at finite strains". International Journal of Plasticity 46, pp. 37-53 (2013). *56 citations in WoS, highly cited paper in ESI.*

75. A. Griera, M.G. Llorens, E. Gomez-Rivas, P.D. Bons, M.W. Jessell, L.A. Evans and R. Lebensohn: "Numerical modelling of porphyroclast and porphyroblast rotation in anisotropic rocks". Tectonophysics 587, pp. 4-29 (2013).

74. R.I. Barabash, A.D. Rollett, R.A. Lebensohn, O.M. Barabash and J.W.L. Pang: "Twin boundary-induced intrinsic strengthening in nickel". Thin Solid Films 530, pp. 14-19 (2013).

73. M. Knezevic, R.J. McCabe, C.N. Tomé, R.A. Lebensohn, S.R. Chen, C.M. Cady, G.T. Gray III and B. Mihaila: "Modeling mechanical response and texture evolution of alpha-uranium as a function of strain rate and temperature using polycrystal plasticity". International Journal of Plasticity 43, pp. 70-84 (2013). *51 citations in WoS, highly cited paper in ESI.*

72. M. Knezevic, R.A. Lebensohn, O. Cazacu, B. Revil-Baudard, G. Proust, S. Vogel and M.E. Nixon: "Modeling bending of alpha-titanium with embedded polycrystal plasticity in implicit finite elements". Materials Science and Engineering A 564, pp. 116-126 (2013). *53 citations in WoS.*

71. R.A. Lebensohn and O. Cazacu: "Effect of single-crystal plastic deformation mechanisms on the dilatational plastic response of porous polycrystals". International Journal of Solids and Structures 49, pp. 3838-3852 (2012).

70. J.P. Escobedo, E.K. Cerreta, C.P. Trujillo, D.T. Martinez, R.A. Lebensohn, V.A. Webster and G.T. Gray III: "Influence of texture and test velocity on the dynamic, high strain, tensile behavior of zirconium". Acta Materialia 60, pp. 4379-4392 (2012).

69. R.A. Lebensohn, M.I. Idiart and P. Ponte Castañeda: "Modeling microstructural effects in dilatational plasticity of polycrystalline materials". Procedia IUTAM 3, pp. 314-330 (2012).

68. R.A. Lebensohn, R.A. Holt, J.A. Caro, A. Alankar and C.N. Tomé: "Improved constitutive description of single crystal viscoplastic deformation by dislocation climb". Comptes Rendus Mécanique 340, pp. 289-295 (2012).

67. A.K. Kanjarla, R.A. Lebensohn, L. Balogh and C.N. Tomé: "Study of internal lattice strain distribution in stainless steel using a full-field elasto-viscoplastic formulation based on fast Fourier transforms". Acta Materialia 60, pp. 3094-3106 (2012).

66. R.A Lebensohn, A.K. Kanjarla and P. Eisenlohr: "An elasto-viscoplastic formulation based on fast Fourier transforms for the prediction of micromechanical fields in polycrystalline materials". International Journal of Plasticity 32-33, pp. 59-69 (2012). *78 citations in WoS, highly cited paper in ESI.*

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3. R.A. Lebensohn and C.N. Tomé: "A study of stress state associated with twinning nucleation and propagation in anisotropic materials". Philosophical Magazine A 67, pp 187-206 (1993). *58 citations in WoS.*
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INVITED LECTURES

82. R.A. Lebensohn: “FFT-based models for mesoscale materials science of polycrystalline metals”. Invited Lecture. 2017 MRS Spring Meeting, Phoenix, AZ, April 2017.

81. R.A. Lebensohn and A. Needleman: “Accounting for the micromechanical effect of grain boundaries using a new FFT-based strain-gradient polycrystal plasticity formulation”. Invited Lecture. 2017 TMS Annual Meeting & Exhibition, San Diego, CA, February 2017.

80. R.A. Lebensohn and R. Pokharel: “Recent applications of micromechanical modeling directly coupled with advanced characterization techniques of polycrystalline materials”. Invited Lecture. 2017 TMS Annual Meeting & Exhibition, San Diego, CA, February 2017.

79. R.A. Lebensohn: “Multiscale modelling of microstructure evolution in polycrystalline materials: physical and numerical challenges”. Invited Lecture. 8th Multiscale Materials Modelling International Conference (MMM 2016), Dijon, France, October 2016.

78. R.A. Lebensohn, R. Pokharel and B. Clausen: “Towards an integrated experimental/modelling framework to account for microstructural effects on damage under extreme conditions”. MaRIE External Advisory Board Meeting, Los Alamos National Laboratory, Los Alamos, NM, September 2016.

77. R.A. Lebensohn: “In-situ 3-D characterization and direct micromechanical modelling for identification of microstructure-property relationships in polycrystalline materials”. Department Seminar. Department of Materials Engineering, University of British Columbia, Vancouver, Canada, September 2016.

76. R.A. Lebensohn and R. Pokharel: “Towards an integrated experimental/modelling framework to account for microstructural effects on damage under extreme conditions”. Invited Lecture. IUTAM Symposium on Integrated Computational Structure-Material Modeling of Deformation and Failure under Extreme Conditions. Baltimore, MD, June 2016.

75. R.A. Lebensohn and A. Needleman: “Accounting for the effect of dislocations in continuum plasticity by means of a non-local spectral formulation”. Invited Lecture. 2016 SIAM Conference on Mathematical Aspects of Materials Science. Philadelphia, PA, May 2016.

74. R.A. Lebensohn: “FFT-based micromechanical modeling of plastically deforming polycrystalline materials”. Materials and Surface Engineering Colloquium, Danish Technical University (DTU), Copenhagen, Denmark, March 2016.

73. R.A. Lebensohn and A. Needleman: “Numerical implementation of non-local polycrystal plasticity using fast Fourier transforms”. Keynote Lecture. International Symposium on Plasticity 2016, Kona, HI, January 2016.

72. R.A. Lebensohn and R. Pokharel: “Discovery and numerical tractability of microstructure-property relationships through micromechanical modeling of polycrystalline materials”. Invited Lecture. 2015 TMS Annual Meeting & Exhibition, Orlando, FL, March 2015.

71. R.A. Lebensohn et al.: “Towards the computational design of damage-tolerant materials: characterization and modeling of microstructural effects on porosity evolution of polycrystalline metals”. Invited Lecture. 2015 TMS Annual Meeting & Exhibition, Orlando, FL, March 2015.

70. R.A. Lebensohn: “Microstructure based and experimentally validated modeling of ductile damage in polycrystalline materials”. Keynote Lecture. International Symposium on Plasticity 2015, Montego Bay, Jamaica, January 2015.

69. R.A. Lebensohn: “Identification of preferential sites for void nucleation and growth in polycrystals via in-situ 3-D characterization and micromechanical modelling”. Invited Lecture. AmeriMech Symposium: Material Property Identification, Austin, TX, December 2014.
68. R.A. Lebensohn: “Fast Fourier Transform-based micromechanical modeling with direct input from 3-D images of polycrystalline microstructures”. CLASSE Seminar. Cornell High Energy Synchrotron Source (CHESS), Ithaca, NY, November 2014.
67. R.A. Lebensohn: “Fast Fourier Transform-based micromechanical modeling with direct input from 3-D images of polycrystalline microstructures”. Invited Lecture. 2nd International Congress on 3D Materials Science (3DMS 2014), Annecy, France, June 2014.
66. R.A. Lebensohn: “On how Suquet et al’s FFT-based formulation is changing the way polycrystal plasticity is modeled and microstructural measurements are interpreted and utilized”. Invited Lecture. International Symposium on length scale in solid mechanics: mathematical and physical aspects. Paris, France, June 2014.
65. R.A. Lebensohn: “Micromechanical modeling of polycrystalline materials from 3-D microstructural images”. Semiplenary Lecture. 8th Annual Meeting of the Argentinian Physics Association (AFA), Bariloche, Argentina, September 2013.
64. R.A. Lebensohn: “Fast Fourier Transform-based micromechanical modeling of polycrystals with direct input from microstructural images”. X-Ray Science Division (XSD) Seminar. Advanced Photon Source (APS), Argonne, IL, August 2013.
63. R.A. Lebensohn: “Microstructural effects on ductile damage of polycrystalline materials”. Invited Lecture. IUTAM Symposium on Materials and Interfaces under High Strain-Rate and Large Deformation, Metz, France, June 2013.
62. R.A. Lebensohn: “Fast Fourier Transform-based micromechanical modeling of polycrystals with direct input from microstructural images”. Invited Lecture. European Workshop on Methods for 3-D Microstructural Studies. Metz, France, June 2013.
61. R.A. Lebensohn: “Material models to capture microstructural effects on strength, anisotropy and damage”. 2013 Materials Capability Review, Los Alamos National Laboratory, Los Alamos, NM, May 2013.
60. R.A. Lebensohn: “Fast Fourier Transform-based micromechanical modeling of polycrystals with direct input from 3-D microstructural images”. Invited Lecture. 2013 TMS Annual Meeting & Exhibition, San Antonio, TX, March 2013.
59. R.A. Lebensohn: “Micromechanical modelling of polycrystals using Fast Fourier Transforms beyond incompressible local viscoplasticity”. Keynote Lecture. International Symposium on Plasticity 2013, Nassau, Bahamas, January 2013.
58. R.A. Lebensohn: “Different strategies to model microstructural effects on the dilatational plastic behavior of porous polycrystalline materials”. Keynote Lecture. Symposium on Homogenization Strategies for Multiphase Materials, European Solid Mechanics Conference, Graz, Austria, July 2012.
57. R.A. Lebensohn: “Recent advances in Fast Fourier transform-based micromechanical modeling of polycrystals”. Invited Lecture. 3rd International Symposium on Computational Mechanics of Polycrystals (CMCn2012), Bad Honnef, Germany, June 2012.

56. R.A. Lebensohn: "Multiscale computational homogenization of porous polycrystalline materials". Invited Lecture. EUROMECH Colloquium on Multi-scale Computational Homogenization of Heterogeneous Structures and Materials, Marne-la-Vallée, France, March 2012.

55. R.A. Lebensohn: "Spectral elasto-viscoplastic formulation for the prediction of micromechanical fields with direct input and validation from voxelized data". Invited Lecture. 2012 TMS Annual Meeting & Exhibition, Orlando, FL, March 2012.

54. R.A. Lebensohn: "Micromechanical modelling of polycrystals using Fast Fourier Transforms". PRISM Seminar. Center for Prediction of Reliability, Integrity and Survivability of Microsystems (PRISM), Purdue University, West Lafayette, IN, January 2012.

53. R.A. Lebensohn: "Microstructural effects on void growth in polycrystalline materials". Keynote Lecture. International Symposium on Plasticity 2012, San Juan, Puerto Rico, January 2012.

52. R.A. Lebensohn: "FFT-based methods: towards direct input and validation of micromechanical models using 3-D microstructural data". Invited Lecture. Workshop on high-energy x-ray diffraction experiments and detailed computational analyses for understanding multiscale phenomena in crystalline materials, Advance Photon Source (APS), Argonne, IL, October 2011.

51. R.A. Lebensohn: "Modeling ductile damage of polycrystalline materials". Keynote Lecture. IUTAM Symposium on Linking Scales in Computations: from Microstructure to Macro-scale Properties, Pensacola, FL, May 2011.

50. R.A. Lebensohn: "Modelling space-resolved evolution of internal mechanical fields in 3-D polycrystalline microstructures using an elasto-viscoplastic formulation based on Fast Fourier Transforms". Keynote Lecture. International Symposium on Plasticity 2011, Puerto Vallarta, Mexico, January 2011.

49. R.A. Lebensohn: "Micromechanics of polycrystals: full-field computations and second-order homogenization approaches". GALCIT Colloquium. Graduate Aerospace Laboratories California Institute of Technology (GALCIT), Caltech, Pasadena, CA, October 2010.

48. R.A. Lebensohn: "Micromechanical modelling of polycrystals: can we keep up with emerging 3-D characterization techniques?" Department Seminar. Materials Department, RISØ National Laboratory, Roskilde, Denmark, September 2010.

47. R.A. Lebensohn: "Dilatational viscoplasticity of porous polycrystalline materials". Invited Lecture. Workshop "Matériaux Hétérogènes et Composites", in honor of André Zaoui, Briançon, France, September 2010.

46. R.A. Lebensohn: "Modeling LPO evolution using crystal plasticity at conditions relevant to the Earth's interior: exploring the role of dislocation climb". Invited Lecture. 2010 Gordon Research Conference on Rock Deformation, Tilton School, NH, August 2010.

45. R.A. Lebensohn: "Micromechanics of polycrystals: full-field computations and second-order homogenization approaches". ICAMS Seminar, Interdisciplinary Center for Advanced Materials Simulation (ICAMS), Bochum, Germany, May 2010.

44. R.A. Lebensohn: "Crystal Plasticity Fast Fourier Transform-based formulation: theory and applications". F2M Seminar, Fédération Francilienne de Mécanique (F2M), Paris, France, May 2010.

43. R.A. Lebensohn: "Micromechanics of polycrystals: full-field computations and second-order homogenization approaches". IWM Seminar, Fraunhofer-Institut für Werkstoffmechanik (IWM), Freiburg, Germany, April 2010.

42. R.A. Lebensohn: "Micromechanics of strongly heterogeneous polycrystals: crystal plasticity FFT-based computations vs. homogenization approaches". Invited Lecture. 2nd International Symposium on Computational Mechanics of Polycrystals (CMCn2010), Bad Honnef, Germany, March 2010.

41. R.A. Lebensohn: "Numerical experiments: crystal plasticity and FFT-based calculations" Invited Lecture. 2010 MECAMAT (French Group of Mechanics of Materials) National Colloquium, Aussois, France, January 2010.

40. R.A. Lebensohn: "Dilatational viscoplasticity of porous polycrystalline materials". Keynote Lecture. International Symposium on Plasticity 2010, St Kitts and Nevis, January 2010.

39. R.A. Lebensohn: "Heterogeneous microstructures and macroscopic creep behavior of polycrystalline ice". Invited Presentation. American Geophysical Union (AGU) 2009 Fall Meeting, San Francisco, CA, December 2009.

38. R.A. Lebensohn: "Micromechanics of polycrystals: full-field computations vs. high-order homogenization approaches". Invited Lecture. Materials Science and Technology 2009 (MS&T'09) Conference & Exhibition, Pittsburgh, PA, October 2009.

37. R.A. Lebensohn and P. Ponte Castañeda: "Dilatational viscoplastic behavior of polycrystalline materials with cavities at grain boundaries". Invited Lecture. Materials Science and Technology 2009 (MS&T'09) Conference & Exhibition, Pittsburgh, PA, October 2009.

36. R.A. Lebensohn: "Dilatational plastic behavior of polycrystalline materials with intergranular cavities". DCAMM Seminar. Danish Centre for Applied Mathematics and Mechanics, (DCAMM), Copenhagen, Denmark, September 2009.

35. R.A. Lebensohn: "Recent advances in polycrystal modelling". Invited Lecture. International Conference on Processing and Manufacturing of Advanced Materials (THERMEC 2009), Berlin, Germany, August 2009.

34. R.A. Lebensohn: "Dilatational plastic behavior of polycrystals with intergranular cavities". Department Seminar. Department of Mechanical and Materials Engineering, Queen's University, Kingston, Canada, July 2009.

33. R.A. Lebensohn, P. Ponte Castañeda, M.I Idiart and P.G. Vincent: "Dilatational viscoplasticity of polycrystalline materials: homogenization estimates vs full-field results". Keynote Lecture. Third US-France Symposium on Advances in Bridging Scales in Computation. From Microstructure to Macroscale Properties of Heterogeneous Materials. Shalimar, FL, USA, April 2009.

32. R.A. Lebensohn: "Image-based computation of plastic strain heterogeneity and local texture evolution in polycrystalline materials". Keynote lecture. International Symposium on Plasticity 2009, St Thomas, US Virgin Islands, January 2009.

31. R.A. Lebensohn: "Micromechanical modeling of the plastic deformation polycrystalline materials". Laboratory Seminar. Laboratoire de Modélisation et Simulation Numérique en Mécanique, Université de Aix-Marseille III, Marseille, France, November 2008.

30. R.A. Lebensohn, R. Brenner, O. Castelnau and A.D. Rollett: "Predictions and experimental validation of the development of intragranular misorientations in copper

under tension using direct input from OIM images". Invited lecture. 15th International Conference on Textures of Materials (ICOTOM 15), Pittsburgh, PA, June 2008.

29. R.A. Lebensohn: "Micromechanical modeling of the plastic deformation polycrystalline materials: full-field computations vs. homogenization approaches". Seminar. Research and Engineering Education Facility, University of Florida, Shalimar, FL, April 2008.
28. R.A. Lebensohn, R. Brenner, O. Castelnau and A.D. Rollett: "Image-based computation of subgrain texture evolution in copper using input from OIM data and a FFT-based numerical technique". Invited Lecture. International Symposium on Computational Mechanics of Polycrystals, Bad Honnef, Germany, February 2008.
27. R.A. Lebensohn: "Image-based computation of the mechanical behavior of heterogeneous materials using direct input from experimental data and a numerical technique based on Fast Fourier Transforms". Seminar, Materials Laboratory, Wright-Patterson Air Force Research Laboratory, Dayton, OH, January 2008.
26. R.A. Lebensohn: "Towards improved multiscale modelling of viscoplastic metals and geomaterials: full-field and statistical approaches at the mesoscale". Department Colloquium, Physics Department, New Mexico State University, Las Cruces, NM, November 2007.
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