

Wolfgang Ehlers

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Current position

Full Professor for Applied Mechanics at the University of Stuttgart, Faculty of Civil and Environmental Engineering

Education

Diploma Degree (Dipl.-Ing.) in Civil Engineering, Graduation from the University of Hannover (1979)
Doctoral Degree (Dr.-Ing.) at the University of Essen, Department of Civil Engineering, Theses on Finite Plasticity (1983)
Habilitation Degree (venia legendi in Applied Mechanics) at the University of Essen, Department of Civil Engineering, Thesis on Porous Media (1989)

Research interests

Continuum Mechanics and Thermodynamics
Mixture Theories and Poromechanics with Application to Geo- and Biomechanical Problems
Experimental Mechanics and Parameter Identification Methods
Numerical Methods in Mechanics

Career

Associate Professor for Continuum Mechanics at the Technical University of Darmstadt, Department of Mechanics (1991-1995)
Full Professor for Applied Mechanics at the University of Stuttgart, Faculty of Civil and Environmental Engineering (since 1995)

Honors and awards

Gottschalk Diederich Baedeker Prize awarded for the habilitation thesis (1990)

Professional activities

Vice Rector for Organization at the University of Stuttgart (since 2003)
Member of the University Council (since 2003)
Member of the Senate and the Joint Committee of the Deutsche Forschungsgemeinschaft (DFG) (since 2002)
Dean of the Faculty of Civil and Environmental Engineering (1998-2000)
Member of the University Senate (since 1998)
Dean of the Department of Mechanics at the Technical University of Darmstadt (1994-1995)

Summary of journal publications

| Journal | Impact factor | Number of papers |
|--|----------------------|-------------------------|
| International Journal of Plasticity | 2.768 | 2 |
| International Journal for Numerical Methods in Engineering | 1.691 | 3 |
| International Journal of Solids and Structures | 1.327 | 4 |
| Other indexed journals | | 23 |
| Other papers in refereed journals | | 19 |

Selected publications (max. 5)

W. Ehlers, T. Graf, M. Ammann: Deformation and localization analysis of partially saturated soil. Computer Methods in Applied Mechanics and Engineering 193 (2004), 2885-2910.

W. Ehlers, B. Markert: A macroscopic finite strain model for cellular polymers. *International Journal of Plasticity* 19 (2003), 961-976.

W. Ehlers, E. Ramm, S. Diebels, G. A. D'Addetta: From particle ensembles to Cosserat continua: homogenization of contact forces towards stresses and couple stresses. *International Journal of Solids and Structures* 40 (2003), 6681-6702.

W. Ehlers: Foundations of multiphase and porous materials. In W. Ehlers, J. Bluhm (Eds.): *Porous Media: Theory, Experiments and Numerical Applications*, Springer-Verlag, Berlin 2002, pp. 3-86.

W. Ehlers, M. Ammann, S. Diebels: h-adaptive FE methods applied to single- and multiphase problems. *International Journal for Numerical Methods in Engineering* 54 (2002), 219-239.

Other relevant information

Scientific Offers

Associate Professorship for Continuum Mechanics at the Technical University of Darmstadt (1991)

Full Professorship for Strength of Materials at the Otto von Guericke University of Magdeburg (1993)

Full Professorship for Applied Mechanics at the University of Stuttgart (1994)

Full Professorship for General Mechanics at the Ruhr University of Bochum (1998)

Workshop and Conference Committees

Scientific Committee

- 1st, 2nd and 3rd Biot Conference on Poromechanics, 1998, 2002 and 2005
- 4th and 5th Workshop on Porous Media, 2002 and 2004
- 7th International Workshop on Bifurcation, Instabilities and Degradation in Geomechanics, 2005
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Organizing Committee

- Minisymposium on Theoretical and Numerical Methods in Porous Media Theories (Chairman and Organizer), GAMM Conference 1996
- IUTAM Symposium on Theoretical and Numerical Methods in Continuum Mechanics of Porous Materials (Chairman and Organizer), 1999
- 1st GAMM Seminar on Continuum Biomechanics (Chairman and Organizer), 2004
- Prenominated Session on Mechanics of Porous Materials (Chairman and Organizer), 21st ICTAM, 2005
- Minisymposium on Mechanics of Soft Tissues (Chairman and Organizer), GAMM Conference 2005

Editorial Works

W. Ehlers: *IUTAM Symposium on Theoretical and Numerical Methods in Continuum Mechanics of Porous Materials*, Kluwer, Dordrecht 2001

P. A. Vermeer, S. Diebels, W. Ehlers, H. J. Herrmann, S. Luding, E. Ramm: *Continuous and Discontinuous Modelling of Cohesive-Frictional Materials*, Springer-Verlag, 2001

W. Ehlers, J. Bluhm: *Porous Media: Theory, Experiments and Numerical Applications*, Springer-Verlag, 2002

P. A. Vermeer, W. Ehlers, H. J. Herrmann, E. Ramm: *Modelling of Cohesive-Frictional Materials*, Balkema at Taylor & Francis, Leiden 2004