

## Yehuda Ben-Zion: USC

### **Professional preparation:**

B.Sc. Geology and Physics, The Hebrew University of Jerusalem (October 1982).

Ph.D. Geophysics and Seismology, University of Southern California (August 1990).

### **Appointments:**

Assistant Professor of Earth Sciences, University of Southern California, 1997-present

Visiting Professor, the Earthquake Research Institute, University of Tokyo, Japan, 1996.

Research Associate of Geophysics, Harvard University, 1994 - January 1996.

Post-Doctoral fellow, Harvard University (with Professor J. R. Rice), 1991 - 1993.

### **Research Interests:**

Physics Of Earthquakes and Faults, Self-Organization, Disorder and Regularization Processes, Complexity, Dynamic Rupture in Structures with Material Interfaces, Spatio-Temporal Seismicity Patterns and Earthquake Statistics, Information Content of Seismic Catalogs, Theory and Observation of Seismic Fault Zone Guided Waves, Earthquake Prediction, Local Amplifications in Dynamic Seismic Fields.

### **Publications:**

#### *(i) 5 recent publications closely related to the proposed project*

Ben-Zion, Y., Stress, slip and earthquakes in models of complex single-fault systems incorporating brittle and creep deformations, *J. Geophys. Res.*, **101**, 5677-5706, 1996.

Eneva, M. and Y. Ben-Zion, Techniques and parameters to analyze seismicity patterns associated with large earthquakes, *J. Geophys. Res.*, **102**, 17785-17795, 1997.

Ben-Zion, Y. and D. J. Andrews, Properties and Implications of Dynamic Rupture Along a Material Interface, *Bull. Seism. Soc. Am.*, **88**, 1085-1094, 1998.

Ben-Zion, Y., K. Dahmen, V. Lyakhovsky, D. Ertas and A. Agnon, Self-Driven Mode Switching of Earthquake Activity on a Fault System, *Earth Planet. Sci. Lett.*, 172/1-2, 11-21, 1999.

Ben-Zion, Y. C. Sammis and T. Henyey, Perspectives on the Field of Physics of Earthquakes, *Seism. Res. Lett.*, 70, 428-431, 1999.

#### *(ii) 5 other recent significant publications*

Fisher, D. S., K. Dahmen, S. Ramanathan and Y. Ben-Zion, Statistics of Earthquakes in Simple Models of Heterogeneous Faults, *Phys. Rev. Lett.*, **78**, 4885-4888, 1997.

Ben-Zion, Y. and J. R. Rice, Dynamic simulations of slip on a smooth fault in an elastic solid, *J. Geophys. Res.*, **102**, 17771-17784, 1997.

Dahmen, K., D. Ertas and Y. Ben-Zion, Gutenberg Richter and Characteristic Earthquake behavior in Simple Mean-Field Models of Heterogeneous Faults, *Phys. Rev. E*, **58**, 1494-1501, 1998.

Lyakhovsky, V., Y. Ben-Zion and A. Agnon, Distributed Damage, Faulting, and Friction, *J. Geophys. Res.*, **102**, 27635-27649, 1997.

Miller, S. A., Y. Ben-Zion and J.-P. Burg, A Three-dimensional Fluid-controlled Earthquake Model: Behavior And Implications, *J. Geophys. Res.*, **104**, 10621-10638, 1999.

**Collaborators and Other Affiliations:**

*(i) Collaborators (outside USC)*

Agnon Amotz, Hebrew U. of Jerusalem, Israel  
Andrews Joe, USGS, Menlo Park  
Armbruster John, Lamont-Doherty Earth Observatory  
Dahmen Karin, Univ. of Illinois at Urbana Champaign  
Eneva Mariana, Maxwell Technologies (San Diego, CA)  
Fisher Daniel, Harvard University  
Ito Hisao, Geological Survey of Japan  
Lapusta Nadia, Harvard University  
Lockner Dave, USGS, Menlo Park  
Lyakhovsky Vladimir, Hebrew U. of Jerusalem, Israel  
Michael Andrew, USGS, Menlo Park  
Miller Steve, ETH, Switzerland  
Nishigami Kin'ya, Kyoto University, Japan  
Igel Heiner, Munich University, Germany  
Rice James, Harvard University  
Seeber Leonardo, Lamont-Doherty Earth Observatory  
Zheng Gutuan, IBM

*(ii) Graduate and Postdoctoral Advisors*

Ben-Zion's Ph.D. thesis advisor was Keiiti Aki and his postdoctoral advisor was James R. Rice.

*(iii) Thesis Advisor and Postgraduate-Scholar sponsor*

Current graduate advisor of 4 USC students: Shoshana Levin, Yunfeng Liu, Zhigang Peng, Eric Libicki

Current Postdoctoral advisor of Yueqiang Huang