

# OREN LAVAN

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## Optimal Seismic Retrofitting of Buildings Using Energy Dissipation Devices

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### Abstract

Over the past two decades, there has been a significant shift in the approach to structural design under dynamic loadings. Many new technologies associated with passive energy dissipation and control have been introduced and have reached a considerable level of maturity. Furthermore, the overall concept of performance-based design has gained prominence. While all of this represents a major step forward, as a consequence, the design process itself has become increasingly complex.

The aim of this talk is to present ongoing research in which the presenter has been involved. The research is focused on various optimal performance-based seismic retrofitting design methodologies using various types of energy dissipation devices. The methodologies span from more complex formal optimization methods to simplified analysis based methods.

### Short bio

Dr. Oren Lavan is an Associate Professor in the Faculty of Civil and Environmental Engineering at the Technion – Israel Institute of Technology. He received his Ph.D. in Civil Engineering from the Technion in 2006, and was a Visiting Research Scientist (2005-2007) at the Department of Civil, Structural and Environmental Engineering, University at Buffalo – The State University of New York. He recently spent a sabbatical as a Visiting Associate Professor at the Disaster Prevention Research Institute at Kyoto University. Dr. Lavan teaches and conducts research in structural engineering, earthquake engineering, structural control, progressive collapse prediction and computational mechanics. Dr. Lavan has published extensively in the area of structural engineering and mechanics, including more than thirty-five peer-reviewed articles. His articles have been published in premier journals in the field. Dr. Lavan is a member of the American Society of Civil Engineers (ASCE) where he chairs its Structural Dynamics technical committee and is a member of three other committees. He is also a member of the European Association for Earthquake Engineering (EAEE) where he is a member of the executive committee of TG8 (Seismic behavior of irregular and complex structures). He is also active in the Israeli technical committees of standards.

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Seminar will be delivered at the Engineering Hub. Via G. Duranti 93. Perugia

