

Seminar: Infrastructure Performance and Recovery Following the 2023 Türkiye Earthquakes



Invited Speaker: Prof. Derya Deniz,
Özyeğin University, Türkiye

Thursday, July 2, 2026 at 9:30am (Germany, local time)

Online: <https://meeting.uni-weimar.de/b/rooms/ana-roo-7we-rjo/join>

In-person: Hörsaal D, Marienstr. 13C, Weimar

Abstract

The 2023 Türkiye earthquake sequence caused unprecedented disruption to communities and critical infrastructure across a large geographic region. Beyond the immediate physical damage, the earthquakes highlighted the importance of understanding how essential facilities perform and recover following extreme events. This presentation examines the post-earthquake performance and recovery of two key infrastructure sectors—hospital networks and industrial facilities—in heavily affected provinces, including Hatay and Kahramanmaraş.

Drawing on field reconnaissance, damage assessments, and stakeholder interviews, the study evaluates the functionality of 30 hospitals and 131 industrial buildings during the first year following the earthquakes. The findings reveal significant losses in operational capacity immediately after the event, driven by both structural and non-structural damage. Recovery trajectories varied considerably depending on building characteristics, retrofit status, financial resources, and access to alternative facilities and services. While many facilities experienced substantial functional restoration within one year, recovery rates differed across sectors and regions, highlighting the complex interplay between physical damage, organizational capacity, and community needs.

The presentation discusses key observations from the recovery process and explores their implications for infrastructure resilience, performance-based engineering, and disaster risk reduction. The lessons learned from the 2023 Türkiye earthquakes provide valuable insights for improving the design, management, and recovery planning of critical infrastructure systems in earthquake-prone regions worldwide.

SPEAKER BIO: Dr. Derya Deniz is an Associate Professor of Civil Engineering at Özyeğin University, Türkiye. She earned her B.S. degree from Middle East Technical University and her M.S. and Ph.D. degrees from the University of Illinois at Urbana-Champaign. Prior to her current position, she held research appointments at the University of Colorado Boulder and Colorado State University. Her research focuses on performance-based engineering, infrastructure resilience, and natural hazard risk assessment. She is a former Marie Skłodowska-Curie Fellow, is currently a Fulbright Scholar joining soon the Lehigh University as a Visiting Scholar.