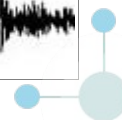
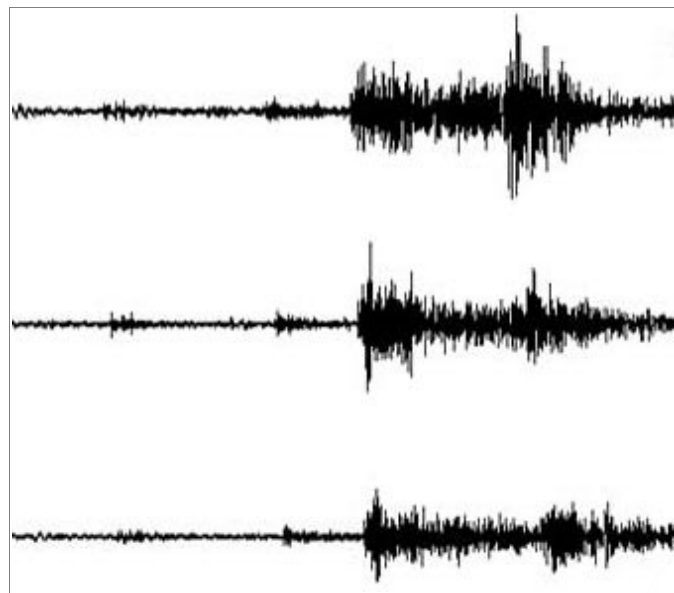


Introduction to Earthquake Engineering



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Thematic structure:

This course will familiarize the students with methods and recent developments in the multidisciplinary field of Earthquake Engineering.

Fundamental seismological principles

Causes and description of earthquakes and tsunamis, recording and evaluation of earthquake waves, earthquake scales, earthquake descriptions- and models, earthquake estimation- and forecast.

Buildings

Typical reaction of engineered and non-engineered structures, non-linear structural mechanisms, non-linear structural behaviour, soil-structure-interaction, time history analysis and response spectrum, code design and analysis, new formats of proof, performance-based design, structural control concepts, equipment for earthquake protection.

Aspects of planning

Architecture suitable for earthquakes, estimation of risks and reduction in urban centres, the role of lifelines.



Method:

The basic background is presented in the context of a lecture. Additional examples are offered and the students have the possibility to work on them on their own.

Assessment:

Participants are expected to attend class regularly, and to actively engage in discussions. A written exam will take place at the end of the seminar.

Lecturer:

Prof. Dr.-Ing. Uwe E. Dorka, University of Kassel, Dept. of Civil Engineering