

Fachbereich:	Risiko und Sicherheit
Leiter der Semesterarbeit:	Dr. Jens Ulfkjaer, HIL E 13.2, 01-633 34 88, ulfkjaer@ibk.baug.ethz.ch , Prof. Dr. Michael H. Faber
Zugezogener Fachbereich:	nach Bedarf
Titel der Semesterarbeit:	Parameter study of the vulnerability of structures
Beschrieb der Semesterarbeit:	<p>Keywords: Finite Elements, Damage and Fragility Curves</p> <p>In earthquake risk management it is common to estimate damages of structures subjected to earthquakes by using so called fragility curves, which gives the probability for a certain level of damage dependent on the intensity of the earthquake.</p> <p>The determinations of fragility curves are normally done using the finite element method. In this project it is proposed to do a parameter study, on different material and structural parameters, and see if the damage is dependent on certain known damage measures.</p> <p>A program package for generation of structure is already available, and this package should be extended during the project, for instance by implementing additional damage measures.</p> <p>The students will benefit from the project as their structural awareness will be increased and concepts as the finite element method, material modeling and probability theory will be learned.</p>
Empfohlene Lehrveranstaltungen: (mit Angabe von Fachnummer und -name)	101-155-00L: Sicherheit im Bauwesen 101-157-00L: Erdbebensicherung von Bauwerken
Besonderes:	<p>As the fragility curves will be established using super computers, interest for programming is important.</p> <p>The project can be made in German or English (as almost all literature on the subject is in English).</p>