

**SENSITIVITY OF EARTHQUAKE RISK MODELS TO
UNCERTAINTIES IN HAZARD, EXPOSURE AND
VULNERABILITY PARAMETERS**

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Abstract:

Sensitivity of earthquake risk models to uncertainties in hazard, exposure and vulnerability components has been investigated. The study is conducted for two test beds with distinctive socio-economic characteristics; Zeytinburnu and Los Angeles. Results are evaluated in terms of overall damage estimates as well as damage estimates of individual building typologies relative to one another. The distribution of damage estimates shows that the respective earthquake risk models are significantly affected by the vulnerability model. Further, the vulnerability model used in the earthquake risk model also influences the ranking of the building typologies according to their damage estimates. In comparison to that, the quality and the level of details of the building exposure database and the selected ground motion prediction equation seem to have less effect on the damage estimates.

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