



## **Correlated Ground Motion – Influence on Loss Estimates**

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Recent studies have shown that the proper treatment of ground-motion variability and, particularly, the correlation of ground motion are essential for the estimation of the seismic hazard, damage and loss for distributed portfolios. In this work we compared the effects of variations in the between-earthquake correlation and in the site-to-site correlation on probabilistic estimations of seismic damage and loss for the extended objects (hypothetical portfolio) and critical elements (e.g. bridges) of a network. Taiwan Island has been chosen as a test case for this study because of relatively high seismicity and previous experience in earthquake hazard modelling. The hazard and loss estimations were performed using Monte Carlo approach on the basis of stochastic catalogues and random ground-motion fields. We showed that the influence of correlation on parameters of seismic hazard, characteristics of loss distribution and the probability of damage depend, on one hand, on level of hazard and probability level of interest (return period) and, on the other hand, the relative influence of each type of correlation is not equal.