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Flood and Seismic Risk Assessment in the Attica Basin

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The aim of this work is to assess the risk in the area of Attica (Greece), related to the natural hazards of earthquake and flood. The term risk (either seismic or flood) refers to the possible consequences of the occurrence of the natural phenomenon and can be evaluated as the product of vulnerability and hazard. The former expresses the possible damage scenarios and the latter their probabilities of occurrence. In order to derive the vulnerability curves that were used in this work, a statistical approach was employed, which utilized observational data from previous flood and earthquake scenarios. Concerning the hazard, the seismic hazard map of the 2003 Greek Seismic Code was used in the case of earthquake, while in the case of flood, the flood hazard maps provided by the Greek Ministry of environment were used. With this information at hand, a quantitative risk assessment was performed and, in addition, a methodology was developed for the loss assessment in monetary terms for both scenarios. Lastly, the results of this study are summarized and future research directions are proposed.

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