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ANALYSIS OF URBAN PARAMETERS IN THE CHARACTERIZATION OF SEISMIC VULNERABILITY: APPLICATION TO THE CITY OF LORCA.

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Commonly, the estimation of seismic vulnerability focuses on the structural behavior of buildings. Only some methodologies, as the one described in the Risk-UE project, consider the influence of other non-structural or urban factors, such as the soft story, vertical irregularity, plan irregularity, etc. These factors, called behavior modifiers, may also have an impact on the observed damage, and the confluence of several of them may vary the vulnerability substantially. Several urban parameters that influence vulnerability are studied in this paper taking as working area the city of Lorca (SE Spain). Additionally, their relationship with the damage observed after the earthquake of May 11, 2011, is investigated.

The work is divided into three phases. In the first phase, or planning phase, a representative sample of the building types according to the General Urban Plan of Lorca is selected, and the methodology for identifying the urban parameters is developed. The second phase or fieldwork phase, comprises the data collection survey. Finally, the third phase, or analysis phase (office work), is carried out. This phase includes the implementation of a geographic information system with data obtained in the field and other sources of information and a statistical analysis of the data.

Finally, the results of the exploratory study of the urban parameters of the city of Lorca are presented. The urban parameters that have influenced the damage caused by the 2011 earthquake are identified.

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