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The historical center of the Bucharest Municipality – spatial modeling in urban disasters

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The main objective of this study is modeling different crisis situations present in the urban environment in a virtual form, thus resulting seismic scenarios that can be analyzed properly in further studies.

The methodology involves GIS functions, submitting a number of urban sheets and statistical processing of data by using inferential statistical procedures in order to show the correlation between variables.

The main purpose of spatial modeling is to offer a proper perception of reality, this aspect being highly important in the study of natural hazards. Taking into account the complexity of the urban environment and the strong human impact, this ambience can be considered the ideal place for a varied range of risks to appear, being favored by the external interventions and the dynamics of the internal changes that occur in the urban system, often unexpectedly. The unpredictability that represents the essence of the risk is usually a chance the society is willing to take in exchange for favorable economical and social results, the prevention and mitigation of the risk becoming a necessity people aren't aware of. Despite of the high vulnerability represented by the urban environment, the reduction of disasters must always be an option. Furthermore, the future and proper development of a city depends on the management of the crisis situations it is confronted with. The urban environment is, in fact, a maximum risk area because of its compactness and high density land occupancy and the Bucharest Municipality makes no exception. The historical center of Bucharest has not only a

cultural function, but is also a highly populated area, the age of the buildings establishing a very high vulnerability to natural hazards. In this case, spatial modeling and the seismic scenarios resulted would be of help while dealing with disasters and also would improve the prediction techniques. By perceiving the present reality in a right way and by assessing the natural risks at their full extent, the local administration and other authorities will be able to intervene efficiently in order to reduce the after-effects in case a disaster already occurred and to promote a disaster protection policy according to local features. Also, based on the fact that an earthquake is the main fear factor in the historical center of Bucharest, seismic scenarios would help develop a higher acknowledgement of the population. Knowing that human behavior is influenced by the perception of reality and also being aware of the fact that natural risks are closely related to the degree in which human interests are harmed by this type of events, correlating the hazard with the human perception plays an important part. In the specific case of the Bucharest Municipality, the citizens give low priority to the situation created of an eventual earthquake and, thus, diminish the damage. This would be where spatial modeling should have a positive contribution, bringing up the level of awareness of both researcher and citizen being helpful in the further management of the risk.