



Mitigating the consequences of future earthquakes in historical centres: what perspectives from the joined use of past information and geological-geophysical surveys?

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To mitigate the damage effects of earthquakes in urban areas and particularly in historical centres prone to high seismic hazard is an important task to be pursued. As a matter of fact, seismic history throughout the world informs us that earthquakes have caused deep changes in the ancient urban conglomerations due to their high building vulnerability. Furthermore, some quarters can be exposed to an increase of seismic actions if compared with adjacent areas due to the geological and/or topographical features of the site on which the historical centres lie.

Usually, the strategies aimed to estimate the local seismic hazard make only use of the geological-geophysical surveys. Through this approach we do not draw any lesson from what happened as a consequence of past earthquakes. With this in mind, we present the results of a joined use of historical data and traditional geological-geophysical approach to analyse the effects of possible future earthquakes in historical centres. The research activity discussed here is arranged into a joint collaboration between the Department of Civil Protection of the Presidency of Council of Ministers, the Institute of Environmental Geology and Geoengineering and the Institute of Archaeological and Monumental Heritage of the National (Italian) Research Council.

In order to show the results, we discuss the preliminary achievements of the integrated study carried out on two historical towns located in Southern Apennines, a portion of the Italian peninsula exposed to high seismic hazard. Taking advantage from these two test sites, we also discuss some methodological implications that could be taken as a reference in the seismic microzonation studies.