



A MATLAB procedure for the encoding of macroseismic effects and the objective estimation of seismic intensity by the Fuzzy sets method.

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In previous works we developed a Fortran procedure for the encoding and the computer analysis of the macroseismic effects deduced from historical sources that allow the complete formalization of the process of seismic intensity assessment. The texts representing the macroseismic information are decomposed in 5 main syntactic elementary components by using alphanumeric codes. The database includes presently more than 33000 effects relative to 8 significant Italian earthquakes of the last two centuries that can be analyzed by multi-criteria decision-making algorithms to estimate objectively the seismic intensity at each locality. The complete procedure was now translated to MATLAB and was definitely improved by the inclusion of new tools for the encoding, the georeferencing and the checking of the data and of new Fuzzy algorithms for intensity determination. The output of the procedure is strictly integrated with the new version of “Boxer” code for the determination of seismic source parameters.