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LIMITS AND POSSIBILITIES OF COMPUTER SUPPORT IN PRIORITY SETTING FOR EARTHQUAKE RISK REDUCTION

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Numerical methods in dynamic structural analysis (FEM) allow for direct use of strong motion data to estimate earthquake loss. Options regarding the location of the same retrofit system as well as actions concretised in different retrofit systems for the same building under earthquake action in Romania and Greece were simulated. Different damage distribution results will be shown. Damage is only one of the criteria taken into account for retrofit priority setting. Simulations were run also for cummulated damage from composed strong motion. A criterion weighting computer tool is of use for a multicriterial view. Two alternatives of criterion weighting rules for decision making are compared regarding proposed computer supports. These are the pair wise comparison method and the rating method (here: utility value approach). The rating method is presented in an existing version supported by a spread sheet environment. The pair wise comparison method can be supported in a spread sheet environment as well, but here a system specially developed by the author is presented. This one includes multimedia support with images, which are important when taking into account spatial changes on buildings. The potential for interactivity between the computer tool and the decision maker is hereby emphasized. Bringing for the interaction with the computer system from the decision support system to criterion weighting support system is based on the fact that many actors implied in the decision making, not just many criteria, have to be taken into consideration. Thus also a digression regarding the support potential for collaborative issues, possible with use of the internet, will be made. Finally the difference between criterion weighting tools for seismic risk reduction on building level versus urban level is analysed. The potential to incorporate strong motion data in the analysis of earthquake effect on buildings is taken into account at urban scale for the case of Romania and Turkey.