

Interactive comment on “Developing a performance evaluation functional model for cities impacted by a natural hazard: application to a city affected by flooding” by G. Bambara et al.

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The article Developing a performance evaluation functional model for cities impacted by Natural hazard : application to a city affected by flooding presents the adaptation of existing methods from engineering to the development of a model for improvement of cities capacities to cope with natural hazards. At first I join in with the positives comments highlighting the interest and originality of this approach. It allows expecting the development of new tools for the improvement of city preparation to cope with natural hazards and crisis management. Indeed, this approach represents a significant first step for crisis management improvement, especially by formalization of process

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and cascading effect leading to major catastrophe as good as to an efficient crisis management. Perhaps authors could include in discussions some possible improvements susceptible to increase its operational aspects. At first it could be to take into account scenarios likelihood, according to risks of failure from infrastructures or rescue services in a given context. This kind of approach implies the needs to model and propagate uncertainties concerning failures (from physical models, statistic and/or expert assessments). Also, in such cases it may be useful to generate crisis scenarios automatically with a software (such an approach has been developed for urban technical networks: Lhomme S., Serre D., Diab Y., Laganier R. 2011 – *Network resiliency assessment integrating network interdependencies*, European Geosciences Union General Assembly Session NH9.11 - Natural hazard resilient cities: methods and tools to qualify and quantify, 2011, Vienna, Austria, 03 – 08 April 2011). Combined with assessment of scenarios likelihood, this can lead to identify automatically the most critical scenarios and to prioritise actions for improvement of most critical infrastructures resistance/rescue services interventions or decrease most critical uncertainties on resistance/rescue services interventions.

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