Nat. Hazards Earth Syst. Sci. Discuss.,
doi:10.5194/nhess-2017-22-RC3, 2017

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "A GIS-based monitoring and early warning system for cover-collapse sinkholes in karst terrane in Wuhan, China" *by* Li Xueping et al.

Anonymous Referee #1

Received and published: 13 April 2017

Dear editor and authors, this is also my first time with this review process type, I found it interesting while I expect to find a new version of the manuscript and not an answer to what can be do (I have not found the new version of the manuscript, then I cannot evaluate it or if the suggested changes and suggestions have been incorporated in the article). About the answer to my previous comments, manuscript is entitled with "early warning", that require a monitoring technique that permits to evaluate indicators that can be used for alert about a collapse that can appear. In this sense, I understand the parts that make reference to evaluate the susceptibility, conceptually some of the proposed monitoring techniques can sound clear, but I am not sure that as presented and described can be used as an early warning. Solution is a long process (fast in

geological terms), possibly the main part of the cavities can be present, or they change through long periods of time. The evaluation of water as a factor can produce the development of collapses due to the rheological changes related to water pressure change, weight, etc. Then this subject is of interest for monitoring but I am not sure if this is an early warning measurement as presented (e.g. about the evaluation of the rheological properties of the materials in a static manner). In some cases the topographical surficial change can be used as predictor for collapse, but it does not exclude that collapses can be used for this subject. GPR, for example, can be used to locate cavities, and to evaluate in time how it progress to surface, but the way to evaluate data does not permit to identify an early warning. All in all, my main concern is still the same related to the early warning, that is the main objective of the manuscript, being the rest of subject more related to susceptibility to karst processes that can be used in urban planning for example, I want to say, measurements to avoid the exposition to the hazard, not to live over it. The monitoring infrastructure that permits to avoid the hazard by early warnings is difficult to evaluate in the proposed manner because some of them requires to be continuously measured.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2017-22, 2017.