Nat. Hazards Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/nhess-2017-192-RC2, 2017

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Brief communication: Vehicle routing problem and UAV application in the post-earthquake scenario" *by* Marco Cannioto et al.

Anonymous Referee #2

Received and published: 8 September 2017

General comments: The discussion paper addresses a relevant research topic which is of high importance to appropriately survey post-disaster environments. UAVs have proven to be a suitable tool to support search and rescue operations after natural hazards. However, the ad-hoc search of an efficient flight plan remains a challenge. The proposed method adequately addresses this task and reveals promising results. The study aims to find an optimal flight path that includes all relevant points of interest. For this, a method that follows the approach of "simulated annealing" is introduced. The method searches for the global optimization of a function and the authors adapted the algorithm to solve a vehicle routing problem in a real world scenario. The origins of the method as well as variances to the equation are well-described. The results show the

Printer-friendly version

Discussion paper

successful implementation of the method and are illustrated properly. In the second part of the results introduces a constraint in regard of the depots (take-off and landing point) which addresses an important element in a real post-disaster situation. Tables and figures support the written text and are well-presented.

Specific comments: Overall, the paper is well-structured and well-written. However, it is not clear which work has been done before to solve this kind of problems. How do other methods fail? Some sentences on the state of the art need to be inserted in order to define the objective of this discussion paper. Furthermore, the mission of the UAV is not is not really clear to me – does it follow the trajectory in a waypoint mode to capture nadir images or does it fly to each point of interest and make one picture? If the latter is the case – how can the damage be assessed if the UAV image shows only the roof? I think it would help to add some more explanations on the task of the UAV in subsection 2.2.

Technical corrections: The manuscript needs an English proofreading and corrections in grammar and style. Typos such as missing space character can be found throughout the paper and should be corrected.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2017-192, 2017.