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Interactive comment on “Geohazard risk assessment using high resolution SAR interferometric techniques: a case study of Larissa National Airport Central Greece” by F. Fakhri and R. Kalliola

Anonymous Referee #1

Received and published: 14 August 2014

General comments: Authors used ERS and Envisat data to show land subsidence in an airport. The technique is not well explained, and the InSAR results and correlation with ground water and precipitation are not well illustrated. This paper should be improved in the aspects of methods and data explanation.

Specific comments and technical corrections:

1, In table 1, please indicate track information for each SAR data instead of orbit, as different track data are involved and orbit can only show the same information as

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acquisition data.

2, Please also list the SAR data in track 279 in table 1, from which interferogram was generated and shown as Figure 4b.

3, Please explain "normalized subsidence deformation rate LOS", does it mean the absolute deformation or the relative annual deformation rate? As shown in Figure 4, I think author should choose reference points to get absolute deformation results, on the other hand, in order to illustrate the short-term deformation, annual deformation rate is not reasonable. So please make sure the meaning of Figure 4. Besides, please also give the deformation result during the summertime in Lines 10-14 for easy comparison sake. As for Figure 4, we do see some fringe, but it is hard to say these fringes are deformation. More interferograms are needed to distinguish between the deformation and atmospheric artifacts.

4, As for Figure 5, if you say the deformation and uplift information, please also indicate the reference points region where no any deformation occurred during the monitoring period.

5, As ERS data and Envisat data are combined for PS calculation in this paper, can you say some detailed and special consideration on this technique, because the carrier frequencies are a little bit different.

6, In the 5th section, only two conventional SAR interferograms can hardly reveal seasonal land deformation, while long-term PS results can not only show long-term deformation pattern, but monthly changes, because denser deformation results have been recovered.

7, Page 8-9, Lines 16-27; Lines 1-20 has little relevance to this topic, you may delete them.

8, the title, "high resolution" is not fit to this paper.

I recommend major revision before the consideration of publish.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 4743, 2014.

NHESSD

2, C1818–C1820, 2014

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