

Interactive
Comment

Interactive comment on “Process-related deformation monitoring by PSI using high resolution space-based SAR data: a case study in Düsseldorf, Germany” by D. Liu et al.

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Format: P(PageNumber)L(LineNumber): "Quoted Text" "Suggestion/Comment"

P4815L10: "However exciting these developments people have made, there are still challenges when applying PSI to monitor subtle deformation by removing signal contamination from, i.e. atmosphere and DEM errors." "Even though there has been great progress in PSI analysis, it is still challenging to detect subtle deformation in some cases, such as the cases that contain atmospheric and DEM errors."

P4818L11: " From January until April 2011, an impressive uplift can be seen adjacent

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to the start point, due to the compensation injection mentioned above" Instead of using a subjective adjective like "impressive", please state the uplift amount to be more objective.

P4818L16: "which indicates very few discrepancies (Fig. 7)." Please explain the discrepancies further. Every reader will not see the same thing when looking at Figure 7. Also state the RMS fit between the two measurements. This will also help expand the discussion section, which is a bit short at the moment.

P4818L20: "replacement of the original pavement, according to the field survey." I believe this reasoning requires more supporting evidence. On most cases we do not get PS from pavement itself, but we get PS points from the interaction between the vertical and horizontal structures (building and ground etc.). Also re-paving would indicate a target phase change, causing time series to be decorrelated. When did the repaving take place? Was the new pavement so thick that it induced 7 mm/yr subsidence? It would also be nice to attach any pictures the authors may have from the field survey.

If these questions can not be answered, I would rather not state a reason, and simply leave it as unknown.

P4819L1: "between the time series retrieved from PSI and from the leveling from a control point indicated good consistency." Please replace "good consistency" with an objective indicator for fitness, such as RMS difference.

P4819L2: " It is therefore concluded that InSAR/StaMPS is able to detect subtle movements for process-related monitoring in urban area with an 11 day data sampling rate, by restraining various error resources." This conclusion is not really relevant to the paper. It has already been shown that InSAR and STAMPS can detect subtle deformation in urban areas with TSX. Therefore please replace this sentence with something that highlights the findings of this study, such as the XX mm/yr subsidence confirmed with leveling.

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P4830: Figure 9. Please indicate in Figure 8, which point this time series is from. Also, the perpendicular baseline plot is hard to read. Please remove it, since the same information is given in Figure 3. Please move the dates of the acquisitions to the X axis, instead of the right hand column.

General comment about Figures 4,5,6, and 8: These figures are dominated with Green color, and it is hard to see differences. Please try to highlight variations between -3 mm/yr and +3 mm/yr range. This way the robustness of the results will be more apparent. Use of a continuous color scale instead of a binned scale with only 8 colors can help as well.

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