

## ***Interactive comment on “A Systematic Exploration of Satellite Radar Coherence Methods for Rapid Landslide Detection” by Katy Burrows et al.***

**Anonymous Referee #1**

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The paper is well written, and the results clearly presented. The topic is of interest for the readers since the research on radar-based post event landslide mapping based on coherence/amplitude is still ongoing. My minor comments are listed below. Abstract L5, “triggering events”. You can specify the type of event L6 “ARIA”, specify the acronym L10 “useful landslide density”, I would say landslide mapping Introduction L22 “could have been much longer had the earthquake occurred during Nepal’s monsoon season”, check this L30 “reliability of global empirical rainfall-triggered landslide susceptibility maps”, the scale itself is a limitation L31 “style of landsliding”, I would say landslide type L41 there are thousands of published paper in this field. I think the reference list can be extended, see some recent examples: \_Dai, K., Li, Z., Tomás, R., Liu, G., Yu, B., Wang, X., ... & Stockamp, J. (2016). Monitoring activity at

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the Daguangbao mega-landslide (China) using Sentinel-1 TOPS time series interferometry. Remote Sensing of Environment, 186, 501-513. \_Solari, L., Del Soldato, M., Raspini, F., Barra, A., Bianchini, S., Confuorto, P., ... & Crosetto, M. (2020). Review of Satellite Interferometry for Landslide Detection in Italy. Remote Sensing, 12(8), 1351. \_Aslan, G., Fomelis, M., Raucoules, D., De Michele, M., Bernardie, S., & Cakir, Z. (2020). Landslide Mapping and Monitoring Using Persistent Scatterer Interferometry (PSI) Technique in the French Alps. Remote Sensing, 12(8), 1305. \_Reyes-Carmona, C., Barra, A., Galve, J. P., Monserrat, O., Pérez-Peña, J. V., Mateos, R. M., ... & Azañón, J. M. (2020). Sentinel-1 DInSAR for Monitoring Active Landslides in Critical Infrastructures: The Case of the Rules Reservoir (Southern Spain). Remote Sensing, 12(5), 809. \_Hu, X., Bürgmann, R., Lu, Z., Handwerker, A. L., Wang, T., & Miao, R. (2019). Mobility, thickness, and hydraulic diffusivity of the slow-moving Monroe landslide in California revealed by L-band satellite radar interferometry. Journal of Geophysical Research: Solid Earth, 124(7), 7504-7518. Satellite radar coherence for change detection L68 “method”→ technique L77 any reference for the boxcar method? Case studies L131 “landslides were triggered by the earthquake”, the occurrence of a typhoon the day before is certainly a trigger as well. L140 and followings, what about the type of landslides that have been triggered? Fig.1 is the inset in (c) Lombok 2? You should specify this in the caption Landslide detection methods L185 check the double “by a landslide” Recommendations on data and methods L379 and one day with images from ROSE-L Building damage L398 do you have an estimate of the number/percentage of false positives due to the buildings? The same comment for the number of false positives due to wind or snow. Rivers You could mask the rivers. Since the single landslide is not the target of your approach, the detection of a single landslide dam should not be possible and the river-mask duable.

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