

Nat. Hazards Earth Syst. Sci. Discuss., author comment AC2
<https://doi.org/10.5194/nhess-2022-21-AC2>, 2022
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Reply on RC1

Katy Burrows et al.

Author comment on "Using Sentinel-1 radar amplitude time series to constrain the timings of individual landslides: a step towards understanding the controls on monsoon-triggered landsliding" by Katy Burrows et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2022-21-AC2>, 2022

Thank you for taking the time to review our manuscript. We will provide a full response later in the review process in which we respond to all comments.

Regarding the main suggestion of this review: "(maybe to add as a supplement material) a figure showing some landslides that have been successfully dated, how they appear in amplitude image before and after the failure and highlight the features of the three methods on them (the shadow area, the buffer around and or respective difference with the landslide body, etc.)." We attach as a supplement two examples of correctly timed landslides, which were selected due to their having a different SAR signal in order to demonstrate:

- 1) A landslide from the Hiroshima dataset successfully assigned a timing interval based on 1) a decrease in landslide vs. background amplitude (Method 1 of our manuscript), increased amplitude variability (Method 2) and the emergence of shadow pixels (Method 3)
- 2) A landslide from the Zimbabwe dataset successfully assigned a timing interval based on 1) an increase in landslide vs. background amplitude (Method 1) and increased amplitude variability (Method 2). Method 3 is not applicable in this case since no shadow pixels exist within the landslide polygon.

Please also note the supplement to this comment:

<https://nhess.copernicus.org/preprints/nhess-2022-21/nhess-2022-21-AC2-supplement.pdf>