

Interactive  
Comment

***Interactive comment on “Syn-eruptive, soft-sediment deformation of dilute pyroclastic density current deposits: triggers from granular shear, dynamic pore pressure, ballistic impacts and shock waves” by G. A. Douillet et al.***

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**Comments from an anonymous reviewer:**

This careful review was very useful and most comments have been accepted. The discussion on flows' "accumulative vs. depletive evolution" was removed, since the "soft-state deformation" structures observed here do indeed not permit discussion without abusive speculation. . .

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## Answers to specific comments:

*"2,71 "metastable conditions" meaning what? Typically they are both unsteady and non-uniform, but be clear how this favours SSD. Do you mean rapidly changing capacity?"*

-This relates to the deposit state, not the flow, adapted.

*"2,108 I like "potatoids" but suspect this is no more helpful than pseudonodule; irregular rounded bodies?"*

-Given the comments from the other reviewer noting confusion on the term pseudonodule, the term potatoid was kept and pseudonodule removed.

*"7,437 Water would enhance cohesion but the concept, as stated, of overweight due to water is too simplistic; needs some elaboration":*

-Sentence modified into "This would enhance cohesion on one hand, and the overweight due to water acting on freshly emplaced, unstable beds could also have triggered the sliding."

*"10,587 I suggest: . . .and may systematically relate to both flow unsteadiness and flow non-uniformity. Check the veracity of the following statement; on the ground it is the other way around for experimental debris flows at USGS flume. Clearly one would anticipate high dynamic pressure associated with the 'impact' of a flow front, but this may not be the same as 'felt' by deposit on the ground. This is worth*

-Experiments by Roche et al. 2010 cited, indeed flow fronts relate to an underpressure due to dilation.

*"11,705 yes, and this needs reconciling with earlier account regarding dynamic pressure and pore pressure effects (see above)":*

-A shock wave is not related to a granular flow. . . I do not understand the link with flow's dynamic pressure.

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