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## ***Interactive comment on “Strain localisation in mechanically Layered Rocks, insights from numerical modelling” by L. Le Pourhiet et al.***

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This paper is a very interesting and important contribution to the localization of strain in "secondary" shear zones emphasizing the importance of the initial orientation of anisotropies to the kinematics of the boundary flow conditions. Loosely speaking, planes of anisotropy inclined against the simple shear direction result in  $c'$  type shear zones and planes of anisotropy inclined into the shear direction result in shortening and folding. In detail much more important implications can be derive from these models. To make this point clear, I suggest to use a more simple terminology of natural structures (e.g. shear bands instead of shear zones, detachment zones, sc structures, asymmetric boudinage, extension crenulation cleavage etc.).

The modeled effects are important at all scales and therefore the jump in the

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manuscript between "small scale" and "large scale" are sometimes confusing (starting with the first sentence in the abstract). Additionally the cited work in the introduction and the presented natural examples highlight the unspecific line throughout the paper of the length scale. I suggest to make the whole model dimensionless and apply the otherwise very important results to all length scales.

Bernhard Grasemann

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Interactive comment on Solid Earth Discuss., 4, 1165, 2012.

**SED**

4, C511–C512, 2012

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