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Interactive comment on “Up the down escalator: the exhumation of (ultra)-high pressure terranes during on-going subduction” by C. J. Warren

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I read with interest the paper of C.J. Warren about exhumation of HIGH to ULTRAHIGH Pressure rocks.

I mostly agree with the review done by the author.

I have two comments, one concerning the exhumation rate, the second concerning the locus of exhumation.

Concerning exhumation rate : my experience on exhumation rate show that continental buoyant crust exhumed at high rate (> cm/yr). The author argue that potentially, large UHP province such as Dabie Sulu in China or the WGR in Norway exhumed slowly. The main problem that arises is that this large province are exhumed as an unique

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large and thick continental piece as proposed by B. R. Hacker and his co workers or it corresponds to successive tectonic slices, stacked at the transition from subduction to collision. The Dora Maira massif in the Alps is symptomatic of such a confusion. The UHP unit is very small (200 meters thick) and sandwiched within HP units. Thus, I doubt that in the case of large HP-UHP provinces that we can use the repartition of the age to estimate exhumation rate.

The second point concerns the locus of exhumation and poses the problem of the eclogite in Papua New Guinea. Most of the HP to UHP rocks worldwide exhumed within the so-called suture zone and representing the paleo subduction zone. This suggests that HP-UHP rocks are exhumed along the subduction plane, except in accretionary wedge when they are mostly exhumed at the rear of the buttress. Consequently, Papua New Guinea is possibly an exception. A recent discussion I had with Suzan Baldwin suggests me that the locus at the present day subduction is not so clear and before to postulate where these rocks are exhumed, a clarification of the geodynamic context is necessary.

Interactive comment on Solid Earth Discuss., 4, 745, 2012.

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