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Interactive comment on “Magnetic signature of large exhumed mantle domains of the Southwest Indian Ridge: results from a deep-tow geophysical survey over 0 to 11 Ma old seafloor” by A. Bronner et al.

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Dear editor,

We would like to thank the anonymous reviewer #2 for his comments. Specific corrections and revised files are detailed in the reply to reviewer #1. Below we will answer the main concern regarding reviewer #2.

Yours sincerely,

The authors.

C1103

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Reviewer #2: In section 9.1 you discuss that regions of mantle exhumation are expected to form from asymmetric detachment faulting but that they also are not separated by a discontinuity from neighboring volcanic regions. Could you expand on this slightly to discuss what the possible mechanism that allows for this is? Do they not show discontinuity with neighboring volcanic regions because the scale of the blocks of exhumed mantle are not of a sufficient size to cause an offset with normally spreading crust?

We believe that the absence of offsets between volcanic and exhumed mantle areas is mainly related to the simultaneity of both mantle exhumation and magmatic injections. Detailed mapping from Sauter et al. (2013) show clearly that small patches of lavas are erupted directly onto the exhumed detachment surfaces, indicating a continual volcanic activity during exhumation. Such observation is also reported at the boundaries between “true” volcanic areas and exhumed mantle domains. It is thus likely that this magmatic activity overly potential discontinuities between both domains.

Interactive comment on Solid Earth Discuss., 5, 2449, 2013.

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