

Supplement 1: 3-D view of the $v_{\rm S}\,$ ANT model of the BM from west. For more details see Fig. 11



Supplement 2: 3-D view of the v_8 ANT model of the BM from north-east. For more details see Fig. 11.



Supplement 3: 3-D view of the v_S ANT model of the BM from north. For more details see Fig. 11.



Supplement 4: 3-D view of the v_s ANT model of the BM from east. For more details see Fig. 11.



15 Supplement 5: Moho depth in the BM crust derived from receiver functions at individual stations The Moho depth of 38 km is contoured. IASP'91 average crust velocity and $v_P/v_S = 1.729$ is used in the Ps–P delay-time conversion to Moho depth.



Supplement 6: Depth differences between the MohoRF and Moho ANT (a) and their frequency distribution (b).



Supplement 7: Depth differences between the MohoRF(vANT)+ and Moho ANT (a) and their frequency distribution (b).



25 Supplement 8: Estimates of vP/vS to match Moho depth from MohoRF(vANT) and MohoANT (a) and its frequency distribution (b). Unrealistic values of vP/vS lower than 1.5 are shaded.



Supplement 9: Tests of gradational vs. sharp Moho at two crossing points of the CSS profiles S04 x CEL10 (a) and CEL09 x 30 CEL10 (b). Thickness of the potential transitional layer does not exceed 2 km in the ANT model.