



The crustal structure beneath Mauritius from teleseismic P-receiver functions - oceanic or continental?

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It has recently been suggested that the volcanic island of Mauritius may be underlain by a remnant of continental origin termed 'Mauritia'. To constrain the crustal thickness beneath Mauritius, we analyzed data from 11 land stations, 10 of which were deployed recently by the RHUM-RUM project. From the recordings, we obtained 382 P-receiver functions (RFs). By applying the H- κ stacking technique, we derive crustal thicknesses of approximately 10–15 km. We observe a considerable variation in the V_p/V_s -ratio caused by a lack of clear multiples. Using forward modeling of RFs, we show that the lack of clear multiples can be explained by a transitional Moho, where the velocity increases gradually. The modeling further indicates that the thickness of this gradient zone is estimated to be approximately 10 km. We argue that our findings suggest oceanic crust thickened by crustal underplating due to the mantle plume currently located beneath the La Reunion.