



Hawaiian lavas: a window into mantle dynamics

Tim Jones, Rhodri Davies, and Ian Campbell
Australia (tim.jones@anu.edu.au)

The emergence of double track volcanism at Hawaii has traditionally posed two problems: (i) the physical emergence of two parallel chains of volcanoes at around 3 Ma, named the Loa and Kea tracks after the largest volcanoes in their sequence, and (ii) the systematic geochemical differences between the erupted lavas along each track. In this study, we dissolve this distinction by providing a geodynamical explanation for the physical emergence of double track volcanism at 3 Ma and use numerical models of the Hawaiian plume to illustrate how this process naturally leads to each volcanic track sampling distinct mantle compositions, which accounts for much of the geochemical characteristics of the Loa and Kea trends.