Comment to “Generation of oceanic-island basalt type volcanism in the western Trans-Mexican volcanic belt by slab rollback, asthenosphere infiltration, and variable flux-melting” by L. Ferrari, C.M. Petrone, L. Francalanci.

Ignacio S. Torres-Alvarado, Surendra P. Verma, and Fernando Velasco-Tapia

Figure 1. $^{87}\text{Sr}/^{86}\text{Sr} - ^{143}\text{Nd}/^{144}\text{Nd}$ plot for volcanic rocks from selected areas belonging to the western MVB as reported in the literature. MVB (basalts) = the complete field of Sr-Nd isotopic composition for basaltic rocks from the MVB (as compiled by Torres-Alvarado et al., 2000). References for isotopic data are: San Juan volcano: Luhr, 2000; Colima rift: Luhr, 1997, and Verma and Luhr, 1993; Tepic-Zacoalco rift, Verma and Nelson, 1989. The fields enclose with continuous line show a sub-alkaline composition, whereas the fields surrounded with a dotted line present an alkaline signature. Trace of the “Mantle-array” (heavy dashed lines) is shown for reference. The dashed-dot curve shows a simple mixing between upper crust (UC, Verma, 2000) and a basic magma from the Tepic-Zacoalco rift. Filled circles are the isotopic composition of Cocos Plate MORB (CPM) as analyzed by Verma, 2000a. The thick solid curve represents the
mixing line of two-component mixing of MORB and sediments from the subducting Cocos plate (sampled at Sites 487 and 488, DSDP Leg 66, in Verma, 2000a). The numbers (2 to 20%) indicate the % of the sediment component in this mixture. The solid arrows represent possible mixtures of the WMVB mantle and the subducted plate. Interestingly, volcanic rocks from the Central American volcanic arc (crosses, Carr et al., 1990) fall in the field predicted for three component mixtures.

References Cited:


