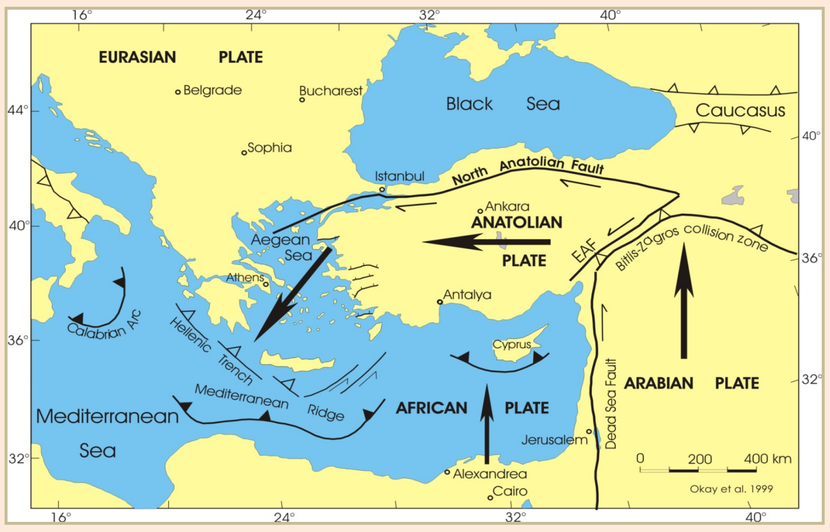
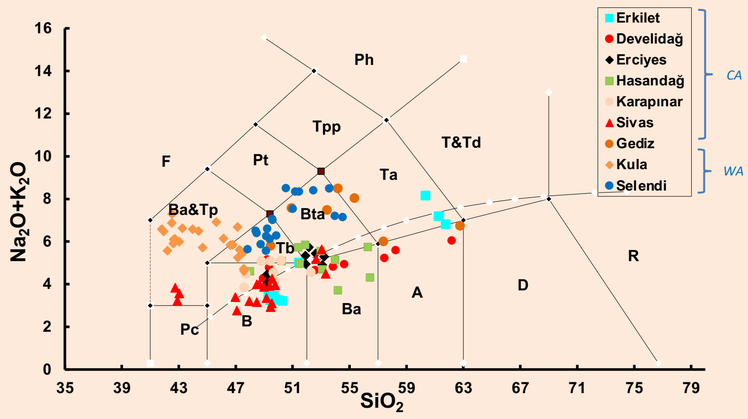
Sr-Nd-Pb isotopic significance of mantle source components from Central and Western Anatolia: Melting evidences from peridotite and pyroxenite source domains

Biltan Kürkcüoğlu & Tekin Yürür
Dept. of Geological Engineering, Hacettepe University, O6800 Ankara-TURKEY

The Tectotic Stage

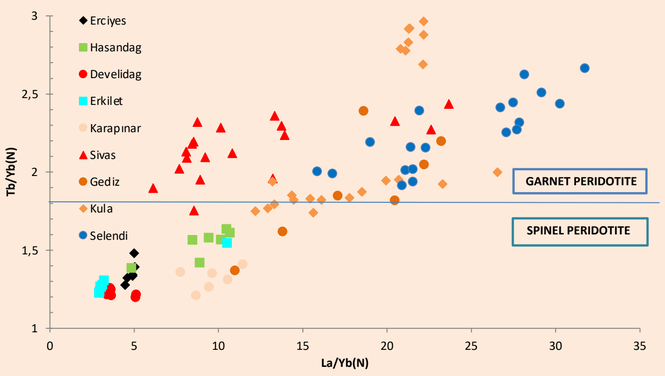


Mafic Lavas are abundant in Central and Western Anatolia

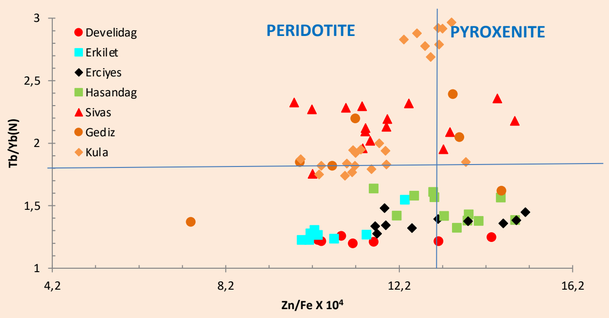


Data from: Kürkcüoğlu et al., 2001; Kürkcüoğlu, 2010, Kürkcüoglu et al., 2015; Güçtekin et al,, 2009; Aldanmaz, 2002; Ersoy et al., 2008; Furman et al., (in review); Gall et al., (in review), This study

Source Constraints

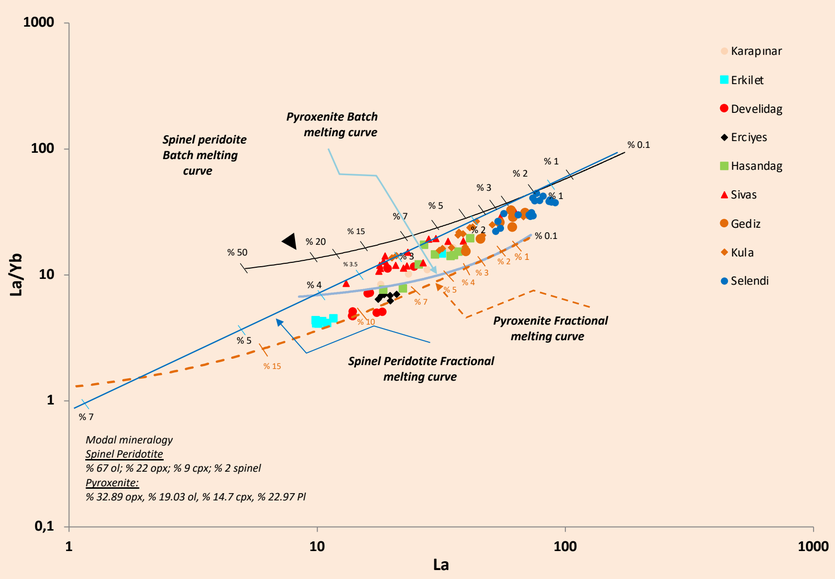


Data from: Kürkcüoğlu et al., 2001; Kürkcüoğlu, 2010, Kürkcüoglu et al., 2015; Güçtekin et al,, 2009; Aldanmaz, 2002; Ersoy et al., 2008; Furman et al., (in review); Gall et al., (in review), This study, Garnet – Spinel seperation value is from Wang et al.,2002



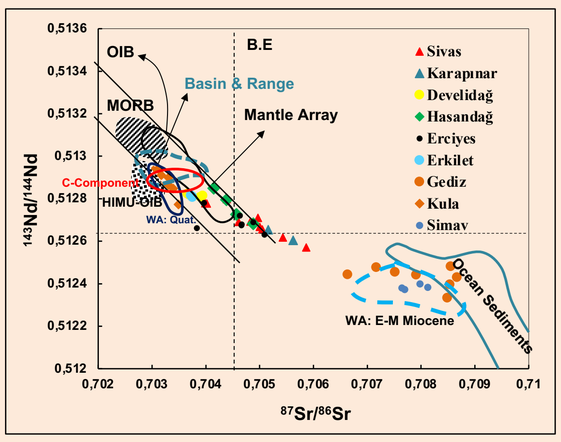
Peridotite-Pyroxenite seperation values are from Le Roux et al., 2011
Both of the source domains were involved in generation of the basaltic rocks rather than single source melting

Melting Model

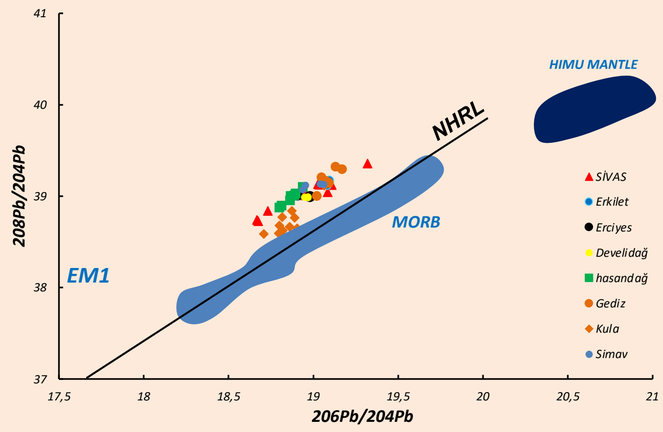


Data from: Kürkcüoğlu et al., 2001; Kürkcüoğlu, 2010, Kürkcüoglu et al., 2015; Güçtekin et al,, 2009; Aldanmaz, 2002; Ersoy et al., 2008; Furman et al., (in review); Gall et al., (in review), This study,

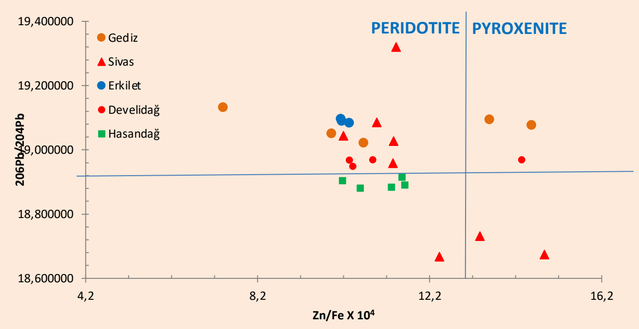
İsotopic Constrainst



Data from: Chen and Frey, 1985; Chen et al., 1990; Kempton et al., 1991; Chaffey et al, 1989; Hanan and Graham, 1996; Kürkcüoğlu et al., 2001; Kürkcüoğlu, 2010; Kürkcüoglu et al., 2015; Çoban et al., 2012; Güçtekin et al,, 2009; Aldanmaz, 2002; Ersoy et al., 2008; Furman et al., (in review); Gall et al., (in review), This study, B.E from Faure, 1986



Data from: İto et al., 1987; Kürkcüoğlu et al., 2001; Kürkcüoğlu, 2010, Kürkcüoglu et al., 2015; Güçtekin et al,, 2009; Aldanmaz, 2002; Çoban et al., 2012; Furman et al., (in review); Gall et al., (in review), This study



Data from: Kürkcüoğlu, 2010, Kürkcüoglu et al., 2015; Güçtekin et al,, 2009; 2012; Furman et al., (in review); Gall et al., (in review), This study

Tb/Yb(N), Zn/Fe ratios and as well as the Pb isotopic compositions and REE-based melting model reveal that Sivas, Erciyes Hasandağ, and Develidağ samples in central Anatolia, and Kula, Gediz basalt in western Anatolia seem to be derived from the amalgamated melting of pyroxenite and peridotite sources, besides, the sources melting is capable of the producing elemental variations in basaltic rocks related with either lithospheric delamination or lithospheric unstability

Department of Geological Engineering
HACETTEPE UNIVERSITY

Biltan Kürkcüoğlu &Tekin Yürür