Geophysical Research Abstracts
Vol. 12, EGU2010-10532-4, 2010
EGU General Assembly 2010

Magnetic properties of mafic dykes from Burkina Faso (Western African Craton)

Sonia ROUSSE (1), Séta NABA (2), Lenka BARATOUX (1), and Mark JESSELL (1)

(1) IRD - Université Toulouse III - CNRS, LMTG UMR5563 - UR154, TOULOUSE, France (sonia.rousse@lmtg.obs-mip.fr), (2) Département de Géologie, Université de Ouagadougou, OUAGADOUGOU, Burkina Faso

At least six generations of mafic dykes can be identified across the West African Craton based on airborne magnetic data. At least three of them can be found in Burkina Faso, for which very little is known on their age or their origin. Based on the available literature, at the scale of the craton, ages range from the Meso-Proterozoic to the Jurassic. The three dykes generations from Burkina Faso are oriented NE-SW, WNW-ESE and NW-SE and on the magnetic anomalies map some of these dykes can be followed over more than 300 km. Preliminary studies showed that texture, grain size and mineralogy vary considerably between the different dyke generations. Since mafic dykes are a useful tool in mapping regional paleostress fields, locating mantle plumes and reconstructing ancient supercontinents, we initiated this study where paleomagnetism, magnetic properties, anisotropy of magnetic susceptibility (AMS) and geochemical data are coupled to better constrain the dykes ages, the stress field in which they were emplaced as well as their potential emplacement mechanisms and to shed light on the particular history of each generation of dykes. Results from 20 sites (176 cores)taken from the mafic dykes of Burkina Faso will be presented.