

A new Jurassic paleomagnetic data and emplacement conditions study of the CAMP Gara Djebilet dykes (Tindouf Basin, Southwest Algeria).

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Abstract: The Central Atlantic Magmatic Province (CAMP) is one of the largest identified Mesozoic basalt provinces formed approximately 200 Ma ago as a preamble to the Pangea dismemberment. Recent ⁴⁰Ar/³⁹Ar dating and geochemical analyses of dolerite sills and dykes and basalt lava flows in southwestern Algeria (Bechar area, Reggane, Hank and Tindouf basins) showed that these rocks are parts of the CAMP. These data represented good arguments to perform geological field observations and sampling for paleomagnetic and magnetic fabric (AMS) investigations in the Tindouf basin CAMP formations. Three NE-SW oriented long doleritic dykes (198.9 ± 1.8 Ma) in this basin were targeted in order to find out the structural context of their emplacement (magnetic fabric) and to determine a new reliable Jurassic pole. The magnetic fabric, in almost the whole sampled sections, is defined mainly by clustering of k1 and k2 axes on the dyke plane whereas the k3 axis is nearly perpendicular to it. This fabric is therefore interpreted as due to magma flow. The new Jurassic paleomagnetic pole, of a good quality, is very close to those obtained from coeval detrital Algerian Saharan formations and those recently determined from coeval Moroccan igneous formations, it is also very close to the 200 Ma mean African pole. These results constitute a considerable contribution to a more precise knowledge of the geodynamical context during this period.

Keywords: CAMP, Paleomagnetism, AMS.