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Paleomagnetic and magnetostructural study of the Gara Djebilet Jurassic magmatic formations (Tindouf Basin, Southwest Algeria)

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Recent geochemical analyses and 40Ar/39Ar dating of dolerite sills and dykes and basalt lava flows in southwestern Algeria (Tindouf, Reggane, Bechar area and Hank basins) showed that these rocks are linked to the Central Atlantic Magmatic Province (CAMP). The later is one of the largest identified Mesozoic basalt provinces formed approximately 200 Ma ago as a preamble to the Pangea dismemberment. These data were strong arguments to undertake geological field observations and a sampling for paleomagnetic and magnetic fabric study in CAMP province formations. Three long doleritic dykes (198.9 $\pm$ 1.8 Ma) in the Tindouf basin were targeted in order to point out the structural context of their emplacement (magnetic fabric) and to determine a new reliable Mesozoic 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 excellent quality, is very close to those obtained from coeval detrital Algerian Saharan formations and also close to those recently determined from coeval Morrocan igneous formations. It is very close to the 200 Ma mean NW African pole too. These results represent a considerable contribution of to a better knowledge of the geodynamical context during this period.