

Abstract

This article presents the results of 3D aeromagnetic and gravity data inversion across the West African Craton (WAC) in South West Algeria. Although the used data have different origins and resolutions, the performed manual and automatic interpretation for each dataset shows a good correlation with some earlier geological studies of the region, major structural aspects of the locality, as well as other new structural features. Many curved faults parallel to the suture zone indicate the presence of terranes or the metacratonization of the WAC and a related fault network of great importance with NE-SW and NW-SE directions. The mega shear zones from north to south, which are visible at the surface in the Hoggar, are also observed along the Saharan Platform. The fact that these faults are observed since the Cambro-Ordovician in all crust (including the Saharan Basins) indicates that this area, which is situated on the border of the WAC, remained active during the entire period of time