

Evidence of fractures from the image of the subsurface in the Akonlinga-Ayos area (Cameroon) by combining the Classical and the Bostick approaches in the interpretation of audio-magnetotelluric data

Ndougsa-Mbarga, T. (1), Meying, A. (2), and Manguelle-Dicoum, E. (2)

Department of Physics, Advanced Teacher's Training College, University of Yaounde I, P.O. Box 47, Yaounde, Cameroon (ndougsa@yahoo.fr), (2) Department of Physics, Faculty of Science, University of Yaounde I, P.O. Box 812, Yaounde, Cameroon

Exploitation of audio-magnetotelluric data has been realised by combining the classical and Bostick approaches with the objective to determine the structuration of layers in the Akonlinga -Ayos subsurface area. The work has been devoted to the processing and interpretation of audio-magnetotelluric data of two profiles respectively Akonlinga-Mengueme and Mbang-Metol which is running approximatively N-S and have nine stations of measurement each over a distance of 35-40 km. These two profiles cover a length of 70 km in the E-W direction. Different representations of data have been used and have shown interesting results. The geoelectric sections derived from these two approaches show the topography of the subsurface with many discontinuities. This topography is presenting a major fault passing between Ngultangan and Olembe and another between Ebale and Envong, both directed E-W. The different geological sections have also been proposed. A discussion of results issued from these two approaches shows that the Bostick approach brings more details in the structuration of layers than the classical one. The combination of the two approaches is necessary for a better interpretation of audio-magnetotelluric data as we have realized it during this study.

Keywords: audiomagnetotelluric soundings, classical and Bostick approaches, interpretation, fault.