

EXPERIMENTAL STUDY OF ELECTROMAGNETIC INDUCTION IN THE EARTH IN THE EQUATORIAL ELECTROJET REGION CONJOINTLY WITH IONOSONDE DATA

K. Boka^a, M. Menvielle^b, V. DOUMBIA^a, P. Vila^b, C. Amory-Mazaudier^b, A. T. Koba^a, O. K. Obrou^a

a: Laboratoire de Physique de l'Atmosphère, Université de Cocody, 22 Bp 582 Abidjan 22, Côte d'Ivoire

b: Centre d'Etude des Environnements Terrestre et Planétaires, Centre National de la Recherche Scientifique, 4 Avenue de Neptune, 94107 Saint-Maur-des-Fossés, France

Within the framework of the International Equatorial Electrojet Year (IEEY), various Instruments were operated in West Africa from November 1992 to December 1994. These are: an ionosonde, an HF radar, a Fabry-Perot interferometer, magnetic and telluric sensors. Ionosonde data recorded at Korhogo, Côte d'Ivoire (Lat. Geom: -1.88 °N; Long:5.43°W) and telluric potential data recorded along a North-South chain of ten regularly spaced stations between Tombouctou (Mali) to the North and Lamto (Côte d'Ivoire) to the South are used to investigate the sources of the electromagnetic variations under the Equatorial Electrojet (EEJ). The results show that diurnal variations of foF2 and the telluric potential are correlated. This may indicate that the currents flowing at the F region contribute to the variations of the electromagnetic field at the ground.

Equatorial electrojet, telluric potential, electromagnetic induction, electric field