REMOTE SENSING AND VLF-EM TECHNIQUES TO DELINEATE LAMPROITES IN VATTIKODE, GUNDRAPALLY AND MAREPALLY AREAS, NALGONDA DISTRICT, TELANGANA STATE, INDIA

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Abstract

The presence of diamonds is known in Kimberlites and lamproite pipes. The present study was carried out in Vattikode, Marepally and Gundrapally areas in the north-eastern Dharwar Craton to delineate lamproites. The remote sensing data of LISS-IV which has a 5.8 m resolution was used to identify lineaments where there could be a possibility of the occurrence of lamproite bodies. This was followed by ground geophysical surveys to delineate the presence of lamproite bodies in this area. For this purpose the Very Low-Frequency Electromagnetic Method (VLF-EM) was used to trace the shallow subsurface lamproite structures using a pseudo-depth section. The VLF-EM observation data were generated along 22 profiles. The interpreted results of LISS IV and VLF-EM data correlated well to delineate lamproite pipes in the area. This was the first time in the country lamproite pipes were delineated using VLF-EM techniques.

Keywords: Lamproites, VLF-EM, Remote sensing, Lineaments, Eastern Dharwar Craton.