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Temporal Changes in Transfer Functions at Port Blair (Andaman Region) During Post Sumatra Earthquake Activity

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Geomagnetic transfer functions are calculated from the geomagnetic field variations. These functions facilitate mapping the internal conductivity structure of the earth. Single station transfer functions (Za=AXn+BYn) for a period range (8-128 min) are computed using only nighttime variations. In this study, we examined the monthly changes of transfer functions obtained at Port Blair station (11.55o N, 92.70o E), associated with post Sumatra earthquake. During three major earthquakes that have taken place on February 26, 05, March 28, 05 and July 24, 05, slight changes in the transfer functions were observed and these changes could be attributed to the litho-tectonic activity. Significant GPS derived post-seismic deformation (with relaxation time of few months) at Port Blair implies to afterslip, visco-elastic and poro-elastic mechanisms. The later two mechanisms either separately or in combination can cause changes in the earth's conductivity distribution at various depths. As the post seismic deformation relaxing to initial stress conditions, the conductivity distribution, as seen from the monthly variations in transfer functions tend to reach normal values. In this paper, we discuss the possible mechanisms for temporal changes in transfer functions at Port Blair site in Andaman region.