

VII Simpósio Brasileiro de Geofísica Espacial e Aeronomia

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THE EMBRACE MAGNET FOR SOUTH AMERICA: READY FOR SPACE WEATHER STUDIES AND APPLICATION

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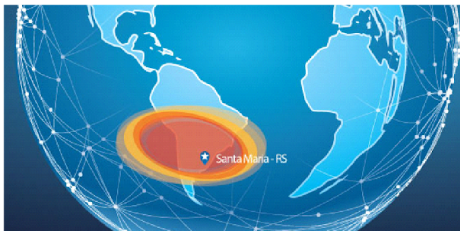
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ABSTRACT

In present work, we present the new Embrace Magnetometer Network (Embrace MagNet) in South America, which is originally planned to cover most of the eastern portion of the Southern America longitudinal sector by installing and operating fluxgate magnetometer stations. We discuss the purpose and scientific goals of the network, associated

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with the aeronomy and space weather. We provide details on the instrumentation, location of the sensors, sensitivity matching process, gain matching process, and magnetometer installation. In addition, we present and discuss details about the data storage, near-real time display and availability. We provide some of the first scientific findings that we have already achieved with this network. We identified the diurnal and the seasonal natural variations of the H component. We provided the precise determination of sudden storm commencements and sudden impulse. We showed that the ΔH amplitudes derived from the Embrace MagNet during intense magnetic storm are in very good agreement with the Dst index. We showed that it is possible to investigate the effects on the solar quiet ionospheric current system as a response to the X-class solar flares occurring during daytime under magnetically quiet conditions.