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Sudden impulse response to interplanetary shocks near the South Atlantic Geomagnetic Anomaly

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In this work we intend to perform a comparative study of the sudden impulse (SI) response to interplanetary shocks near the South Atlantic Geomagnetic Anomaly (SAGA) region. A total of 34 events were selected for analysis during September 2000 - December 2001. The magnetospheric SI response was studied using three ground-based geomagnetic stations: SMS (29.4°S, 53.82°W), VSS (22.4°S, 43.65°W) and KOU (2.21°N, 52.33°W). The geomagnetic symmetrical (SYM) index was also employed in order to characterize the average SI response. Solar wind data were obtained from plasma and magnetic field detectors onboard the ACE spacecraft, orbiting L1 point. SMS station is near the SAGA center, VSS is on the SAGA edge while KOU is situated just outside the SAGA region. Since the total geomagnetic field strength is low in SAGA, the SI response might be different inside and outside the SAGA region. This subject is assessed by correlative analyses among solar shock parameters and SI amplitudes.

Keywords: **sudden impulses, South Atlantic Geomagnetic Anomaly, interplanetary shocks, magnetosphere response**

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