

# [Essays park](https://assignbuster.com/essays-park-essay-samples-29/)

As state by (Campbell, 1989) the Solar Quiet (Sq) is a variation of geomagnetic field that excludedfrom any solar system disturbances. Sq variationis closely related to primary source currentsat ionosphere specific at E region (90 – 150 km) altitude. Sq is generated bydynamo process where the driving mechanism of Sq is ionospheric wind dynamo. Sqalso drove by thermally excited solar tides (Chapman 1919). the ionospheric conductivitytends to rise up when there have an increasing of Sun activities, hence thetotal ionospheric current also increased. Since 1979, studies on Sq analysishave been carried out extensively for the past decades, but only few researchmade that focus on the application of Sq related to Earth interior.

As proof, the study on ionospheric electrodynamic have been done by (Richmond 1979, 1995b) and the magnetosphere and lower atmosphere coupling were conducted by  (Wagner et al. 1980; Richmond 1995b). In thework of  (Wagner et al. 1980; Richmond1995b), they successfully determine a base level for geomagnetic indices usingSq current and (Svalgaard and Cliver 2007; Svalgaard 2016) able to monitor thesolar radiation activity. Last but not least, there is study continuously becarried out in topic estimating electrical conductivity within the Earthstructure and many areas that have been explored in a number of differentcountries by (Campbell and Schiffmacher 1988a; Campbell et al. 1998; Okekeand Obiora 2016).  The Sq currents thatinduced into the Earth’s lithosphere is apparent as the factor that can affectthe underground event. Recently, Geomagnetically Induced Current (GIC) is oneof the underground events associated with the external origin that causesadverse effects on the ground-based technological systems.

Even though the undergroundcurrent is not totally new research, but it’s relatively new in the equatorialregion where this is the first work on GIC located in the equatorial region. There is numerous research that has been conducted in understanding therelationship between ionospheric current and the underground ground. The extentto that, application of Sq current in determining Earth conductivity isrelatively new at Malaysia region where it can be applied for Sq analysistowards significant finding.