# [P14]

# RELATIONSHIP BETWEEN AMPLITUDE OF GEOMAGNETIC SUDDEN COMMENCEMENT (SC) AND THE CORRESPONDING DYNAMIC PRESSURE VARIATION OF THE SOLAR WIND

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Araki [2014] confirmed that SC occurred on March 24, 1940 was largest since 1868. The amplitude is 310nT at Alibag and more than 273nT at Kakioka. Using the experimental relationship between SC amplitude d H and dynamic pressure Pd associated with interplanetary shock (IPS) [Siscoe et al. ; 1968], d H = A d (Pd^0.5) where A is proportionality constant, the corresponding Pd increase was estimated as 400-500nPa.

When the magnetosphere is compressed by IPS, field aligned currents (FACs) and ionospheric currents (ICs) are induced in addition to the primary magnetopause current (MPC). The SC amplitude is determined as the magnetic field produced by these currents. Although it shows a clear LT variation, it is not taken into account in the Siscoe' s relationship.

The calculation of geomagnetic fields due to the FAC and IC [Araki et al. , 2009] show that the resultant field becomes almost zero around 6h LT. Thus the SC amplitude around 6h LT expresses the geomagnetic field caused by MPC which is directly connected with dynamic pressure of the solar wind.

## REFERENCES

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