



## Does space weather effect energy infrastructure in Poland?

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Geomagnetically induced currents (GIC) effects on energy infrastructure are very well-known. Luckily, damages initiated by GIC are not so huge as blackout in Hydro-Quebec in March 1989.

In the literature about the connection with Polish energetic infrastructure and GIC effects one cannot find a lot of information. Pulkkinen et al. (2005) presented that during the Halloween Storm (October-November 2003) there were noticed two incidents on SwePol. SwePol Link is the 450 kV high voltage direct current (600 MW) connection below the Baltic Sea, connecting Poland and Sweden, owned by the PSE-Operator S.A. (operator of national grids in Poland) and the Svenska Kraftnat (operator of national grids in Sweden). At 07:46 on October 29 2003, at Karlshamn on SwePol Link tripped distracting an import of 300 MW from Poland. Also at 18:04, on November 20 2003, an import of 400 MW from Poland was disturbed.

Here we present results of analysis of a series of not very extensive accidents on Polish electrical grids which occurred during the recent solar activity cycle and which weren't initiated by the meteorological effects. The presented episodes match the appearance of geomagnetic disturbances produced by various solar effects.

References: Pulkkinen A., S. Lindahl, A. Viljanen, R. Pirjola, Space Weather, 3, S08C03, 2005, doi:10.1029/2004SW000123

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