日本における巨大宇宙天気現象と現実的な電気伝導度分布を用いた誘導電場の計算（序報）

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Large GIC events in Japan and the induced electric field based on the realistic conductivity profiles (Preliminary report)

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The geomagnetically induced currents (GICs) happen to cause power line failure in the high-latitude countries. Meanwhile, there are no researches about extremes of GICs in Japan with heterogeneous profiles of the underground conductivity. Therefore, to evaluate extremes of the GIC in Japan is not only important for Japanese society but also significant for the scientists. Namely, estimation of extremes of the GIC is a challenging interdisciplinary research from the magnetosphere-ionosphere physics for estimation of the extremely large storms and related phenomena to the solid Earth geomagnetism for electromagnetic response under three-dimensionally heterogeneous conductivity profiles.

We report here preliminary the statistical analysis of the space weather events observed at Japanese magnetic observatories with data accumulation up to about 100years. In addition, we start to simulate the realistic electric field distribution induced on the ground based on a realistic model of the ground conductivity. The simulation will be incorporated with the global MHD simulation with the extremely large solar wind disturbances.