S002-P04
ポスター 1 ：11/24　PM1/PM2 （13:15-18:15）

#堀 智昭 [1)], 新堀 淳樹 [2)], 三好 由純 [3)], 桂華 邦裕 [4)], 笠原 慧 [5)], 横田 勝一郎 [6)], 松田 昇也 [7)], 笠原 禎也 [8)], 松岡 彩子 [9)], 篠原 育 [10)]
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Transient electric and magnetic field fluctuations and particle acceleration upon the sudden commencement of the May 2024 storm

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Energetic particle acceleration associated with electric and magnetic field fluctuations upon the sudden commencement of a super magnetic storm is investigated by primarily analyzing particle and field data obtained by the Arase satellite. An interplanetary shock that arrived at the Earth late May 10, 2024 strongly compressed the dayside magnetosphere and resulted in a geosynchronous magnetopause crossing, kicking out several other satellites located sunward from Arase (at L ~4.7) to the magnetosheath. Arase, which had barely stayed in the magnetosphere at a magnetic latitude of ~21 deg, observed a stepwise increase of the magnetic field intensity and subsequently transient, huge fluctuations of the electric (~50 mV/m peak to peak) and magnetic (~several tens of nT) field with a period of several minutes. In association with each of the transient field fluctuations, both energetic electrons and ions (~a few tens to a few hundreds of keV) showed transient flux increases with higher energy (>30 keV) protons exhibiting clear pitch-angle dispersions (PADs). The very short (~a few tens of seconds) time scale of each PAD indicates that energetic protons are generated over a wide range of pitch angle around the magnetic equator, then travel along a field line, and finally arrive at the satellite at different timings depending on their parallel velocity. A detailed examination reveals that the PAD appears repeatedly with a period of a few tens of seconds during each of the minute-scale flux increases. The observed repetition signature of PADs strongly suggests that such repeated acceleration processes are embedded even in a single flux increase.