S002-07
A 会場 ：11/25　PM1 （13:15-15:15）
13:35〜13:50

#三好 由純 [1)], 篠原 育 [2)], 高島 健 [2)], 浅村 和史 [2)], 三谷 烈史 [2)], 東尾 奈々 [2)], 笠原 慧 [3)], 横田 勝一郎 [4)], 片岡 龍峰 [5)], 田 采祐 [1)], Kumar Sandeep[1)], Porunakatu Radhakrishna Shreedevi[1)], カリオコスキ ミラ [1)], 栗田 怜 [6)], 加藤 雄人 [7)], 堀 智昭 [1)], 桂華 邦裕 [3)], 風間 洋一 [8)], ウォング シャンユー [8)], 土屋 史紀 [7)], 熊本 篤志 [7)], 笠原 禎也 [9)], 松田 昇也 [9)], 新堀 淳樹 [1)], 北村 成寿 [1)], 松岡 彩子 [10)], 寺本 万里子 [11)], 今城 峻 [12)], 山本 和弘 [1)]
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Arase satellite observations of the inner magnetosphere and radiation belts during the May 2024 geospace storm

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In May 2024, during the largest geomagnetic storm of Solar Cycle 25, the Arase satellite successfully conducted comprehensive observations, observing significant phenomena in the inner magnetosphere and radiation belts. Arase often exited the dayside magnetosphere and entered the magnetosheath near its apogee, indicating substantial compression of the magnetosphere. After the storm's main phase, a rapid flux increase in energetic electrons (several MeV) was observed at L <3, marking the largest such event since Arase's launch. Additionally, the plasmasphere shifted earthward to L ˜2. The enhanced electron flux at L <3 persisted for 10 to 30 days, significantly changing the near-Earth radiation environment. By analyzing Arase's data, we estimated the decay time constant of the electron flux and compared it with pitch angle scattering rates induced by plasma waves, including hiss, EMIC waves, VLF transmitters, and lightning whistlers. The initial findings suggest that continuous scattering driven by plasmaspheric hiss predominantly controls the decay of energetic electrons. In this presentation, we will report various observations made by Arase related to radiation belt and inner magnetosphere variations during this historic geomagnetic storm.