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Coordinated observations of relativistic electron enhancements following an HSS period

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During the second half of 2019, a sequence of solar wind high-speed streams ($V_{SW} \geq 600$ km/s) impacted the magnetosphere, resulting in a series of recurrent, relatively weak, geomagnetic storms ($Dst_{min} \geq -80$ nT). During one of these storms, a longer-lasting solar wind pressure pulse and intense substorm activity were also recorded ($AL \leq -1600$ nT on August 31 and September 1).

We use particle measurements from the Van Allen Probes, Arase and Galileo 207, 215 satellites, to investigate this event; all spacecraft observed a significant enhancement of relativistic electron fluxes. We also use ULF and chorus wave measurements, as well as interplanetary parameters, for a detailed investigation of this event and of the acceleration mechanisms involved.

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