

Title: Variations in the Earth's Radiation belts: A review

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Abstract:

The inner magnetosphere is the region that contains the plasmasphere, ring current, and the radiation belts all co-located within about 6.6 R_e . This region consists of plasma populations ranging in energy from a few eV to relativistic and ultra-relativistic electrons and ions. Radiation Belts are of prime importance as they are highly dynamic on spatial and temporal scales. They are toroids, or belts, of very high-energy magnetically trapped particles. Over the years spacecraft such as SAMPEX, CRRES, HEO3, Van Allen Probes, and ongoing ARASE spacecraft have observed prominent ion and electron flux variations in the radiation belts. In this talk, I will discuss the advancement in observations and results of radiation belts in the Earth's inner magnetosphere in space plasmas.

References-

[1] Baker, D., Erickson, P., Fennell, J., Foster, J., Jaynes, A., & Verronen, P. (2018). Space weather effects in the Earth's radiation belts. *Space Science Reviews*, <https://doi.org/10.1007/s11214-017-0452-7>

[2] Kanekal, S., & Miyoshi, Y. (2021). Dynamics of the terrestrial radiation belts: a review of recent results during the VarSITI (Variability of the Sun and Its Terrestrial Impact) era, 2014–2018. *Earth and Planetary Science*, <https://doi.org/10.1186/s40645-021-00413-y>.