



Caracterização do fluxo de elétrons nos cinturões de radiação

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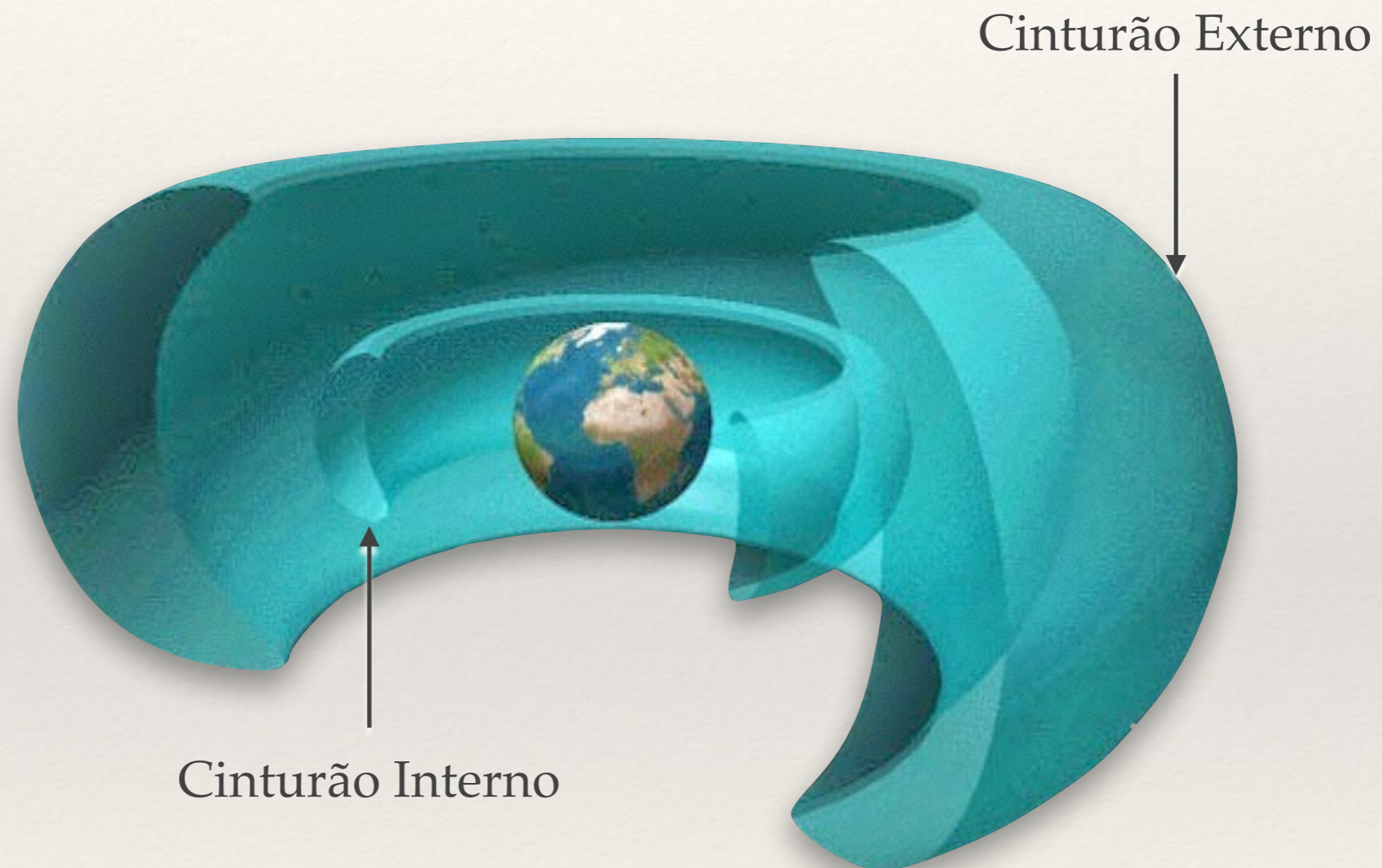
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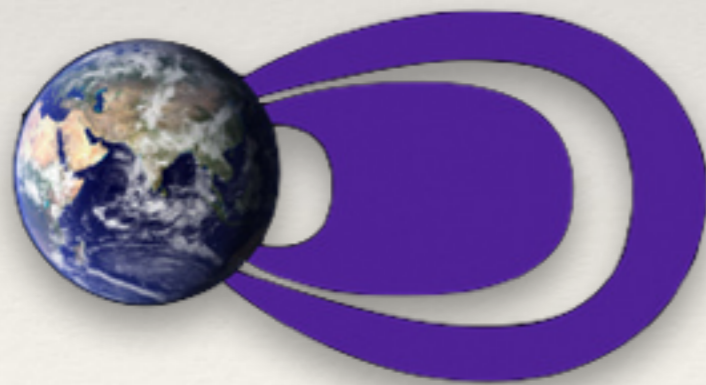
Cinturões de Radiação

Cinturões de Radiação



NASA Goddard/Duberstein

Cinturões de Radiação



Baixas energias



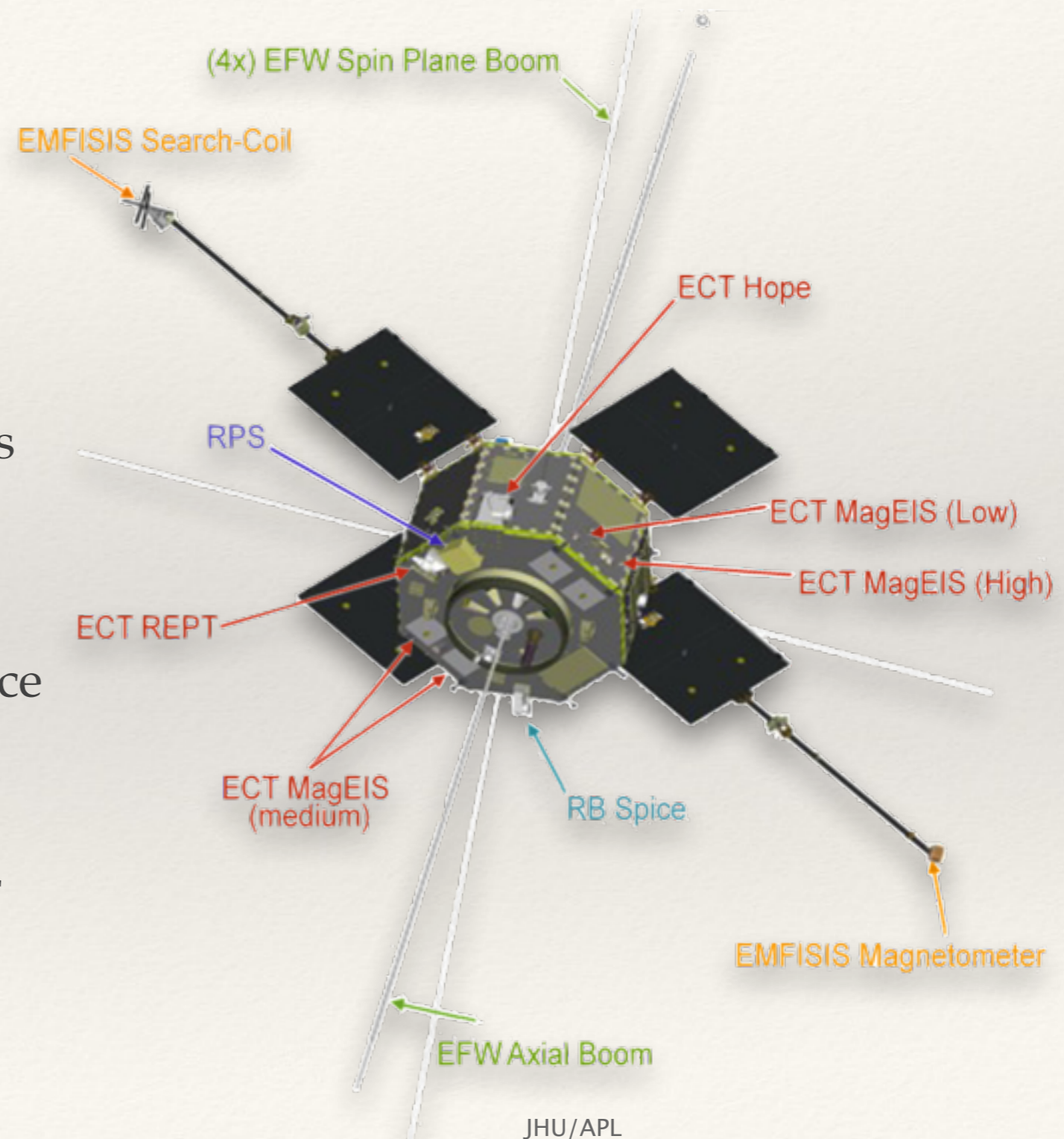
Altas energias



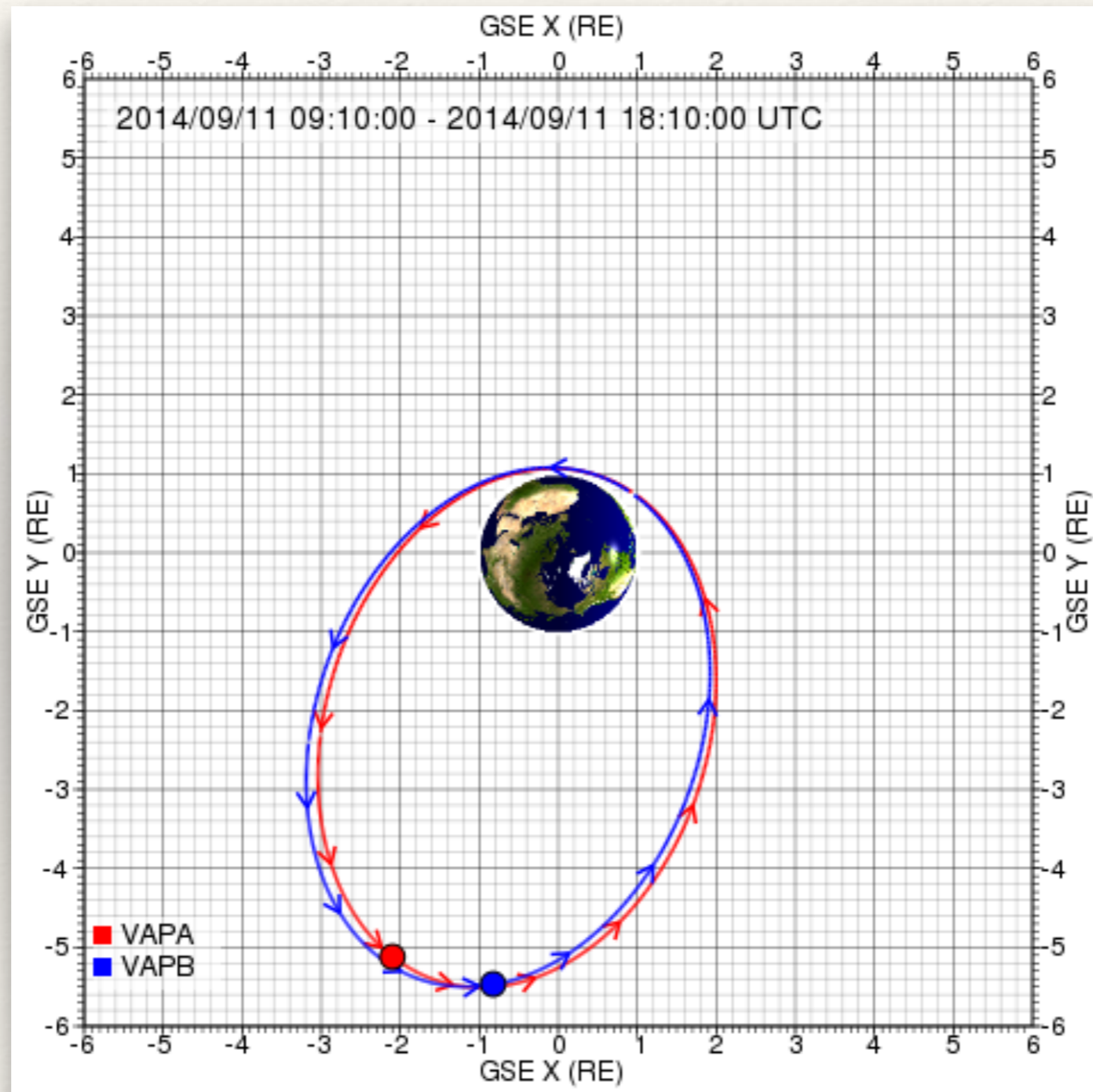
Período perturbado

Sondas Van Allen

- ❖ ECT - Energetic Particle, Composition and Thermal Plasma Suite
- ❖ RB Spice - Radiation Belt Storm Probes Ion Composition Experiments
- ❖ EMFISIS - Electric and Magnetic Field Instrument Suite and Integrated Science
- ❖ EFW - Electric Field and Waves Suite
- ❖ RPS - Relativistic Proton Spectrometer

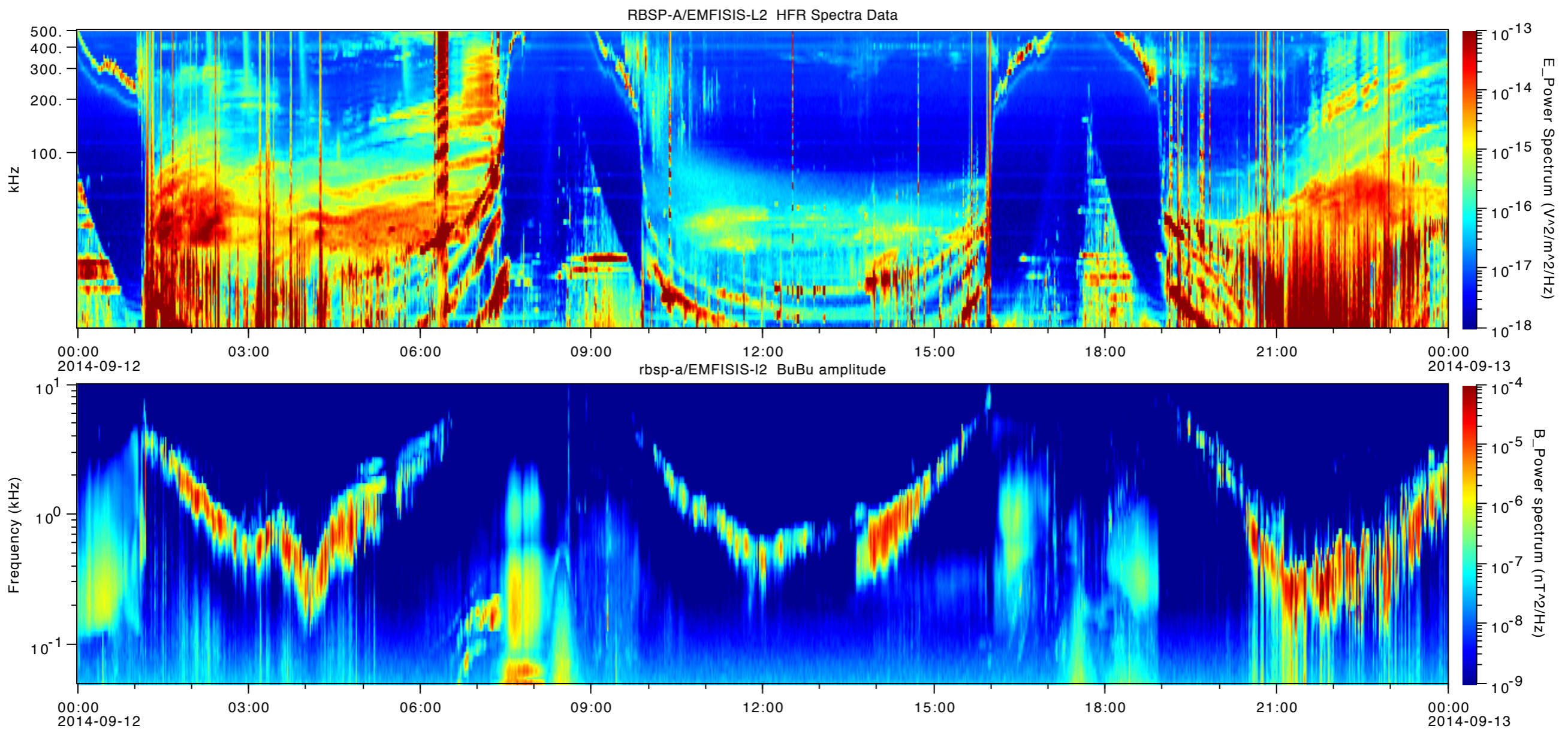


Sondas Van Allen



Ondas na Magnetosfera

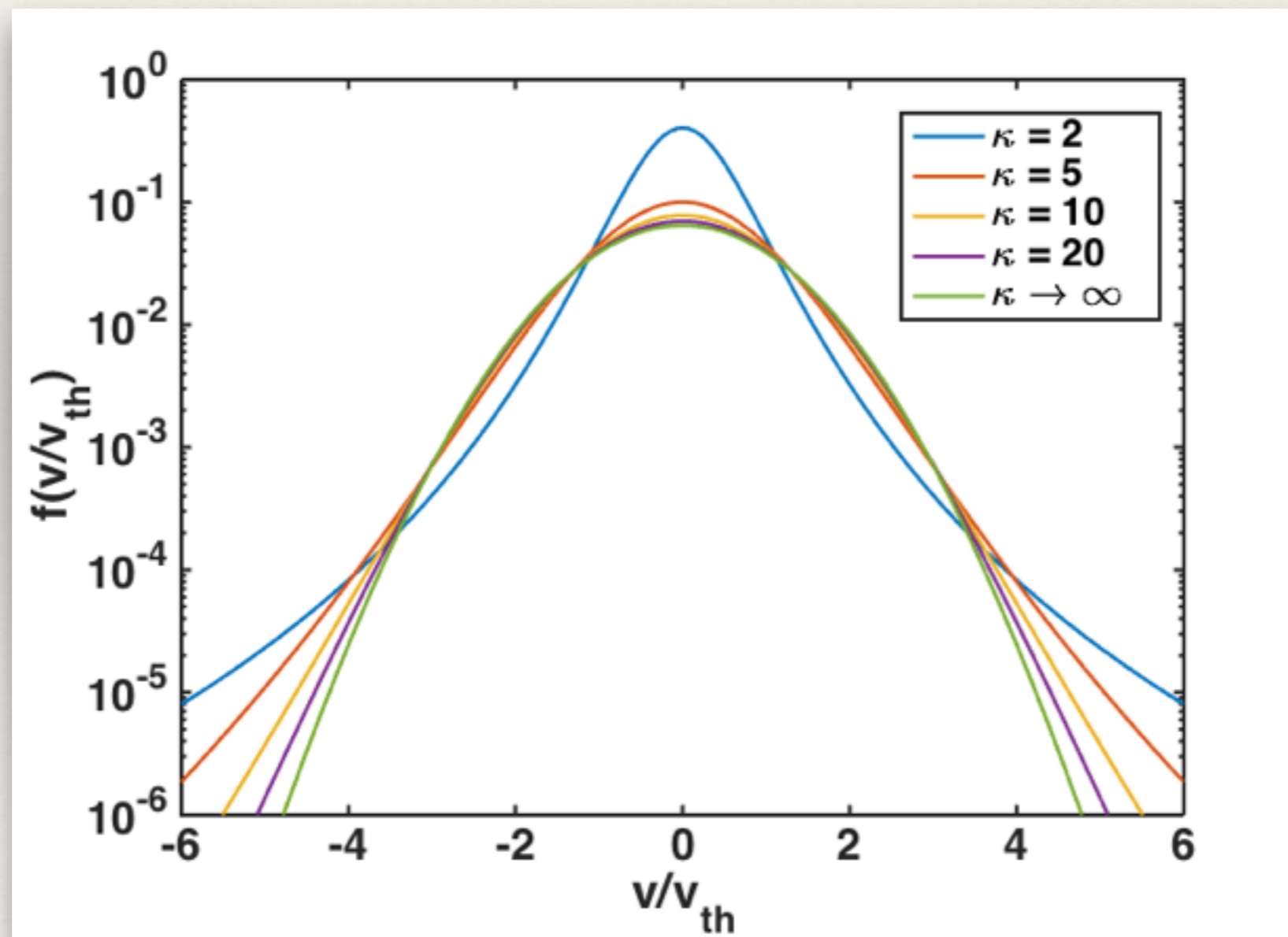
Ondas na Magnetosfera



Funções de distribuição

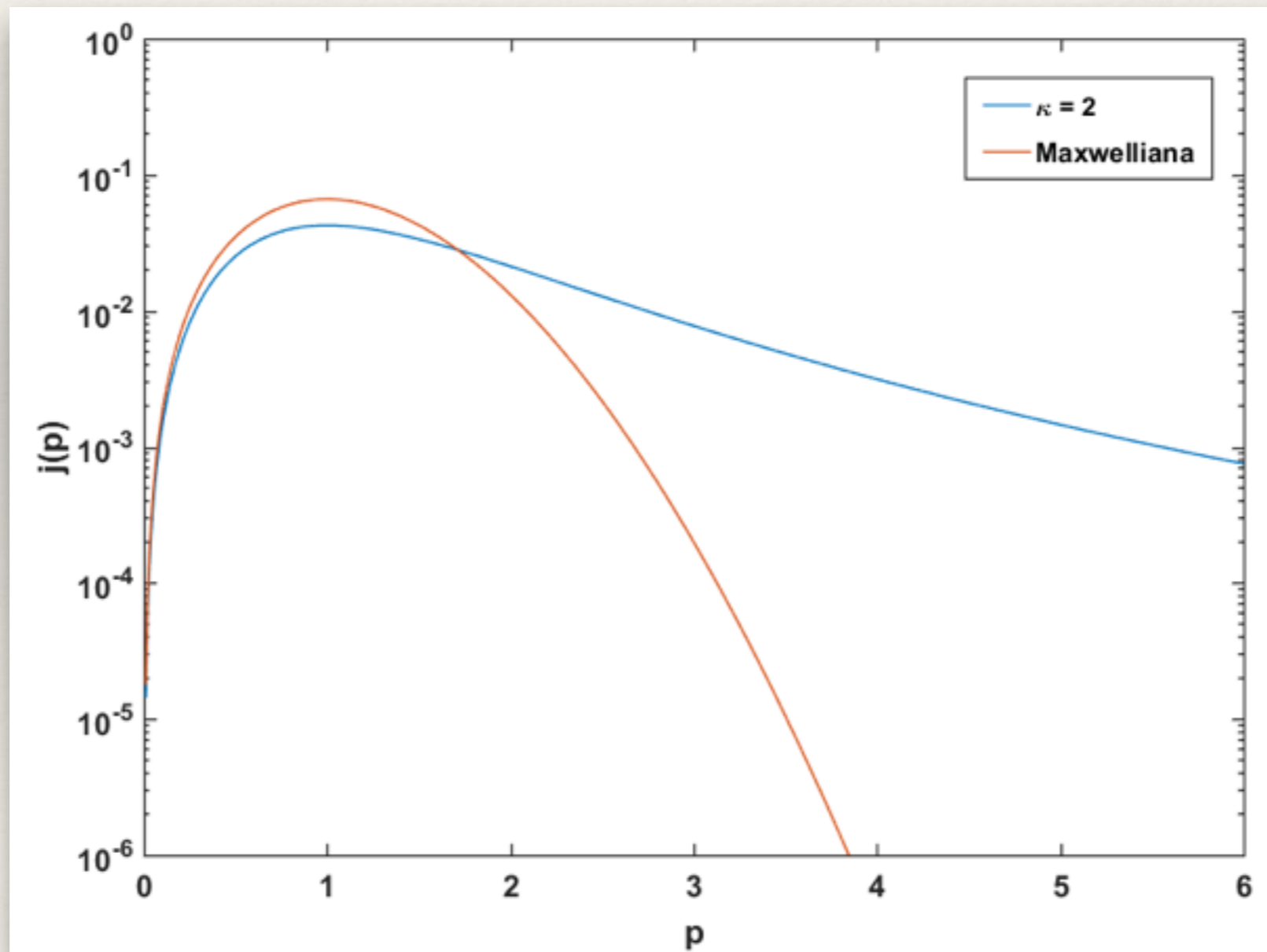
Funções de distribuição

$$f_M(v) = A \exp\left(-\frac{v^2}{2v_{th}^2}\right) \quad f_\kappa(v) = A_\kappa \left(1 + \frac{v^2}{\kappa\theta^2}\right)^{-\kappa-1}$$



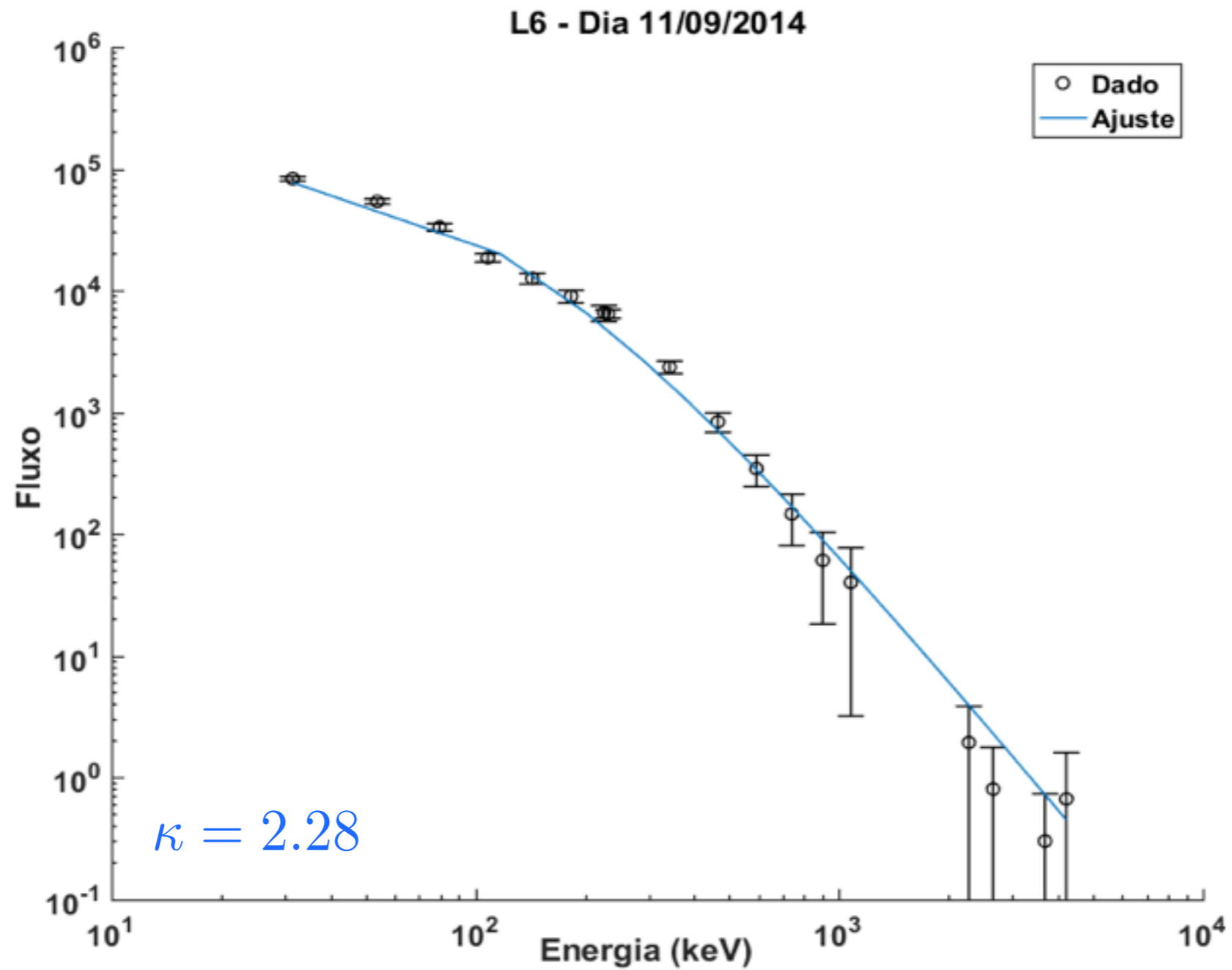
Funções de distribuição

$$j(E) = p^2 f(p)$$

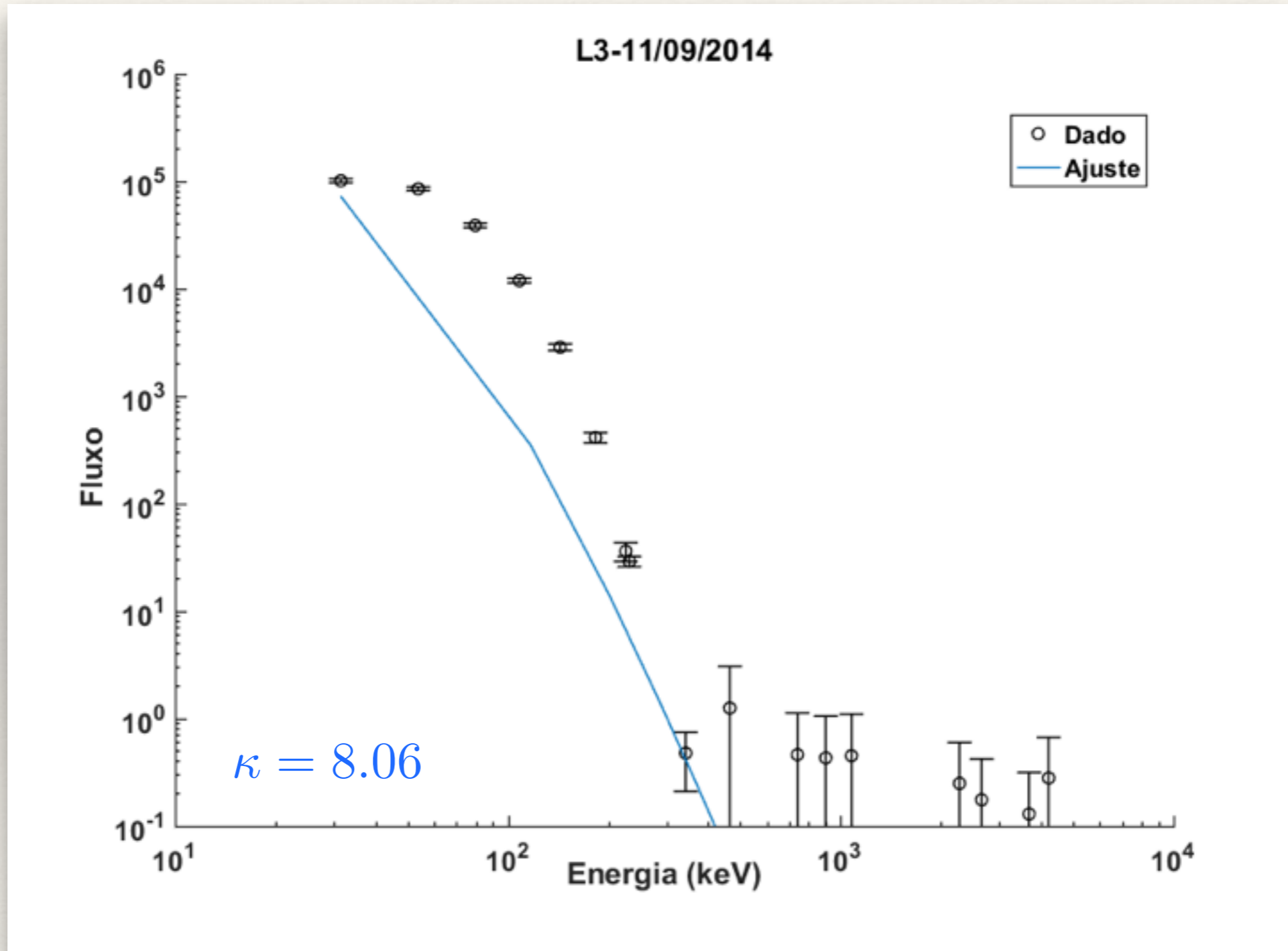


Ajustes

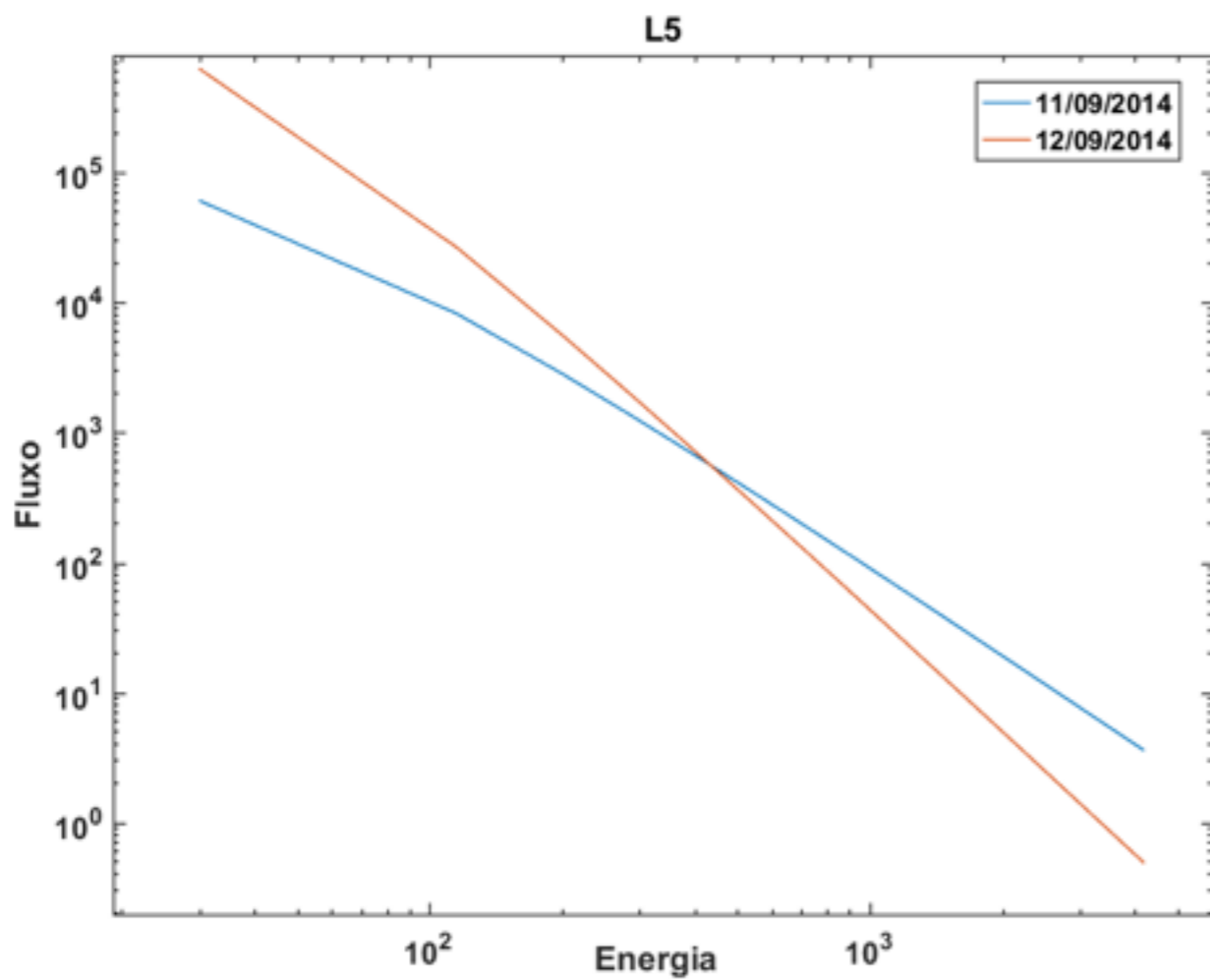
Ajustes



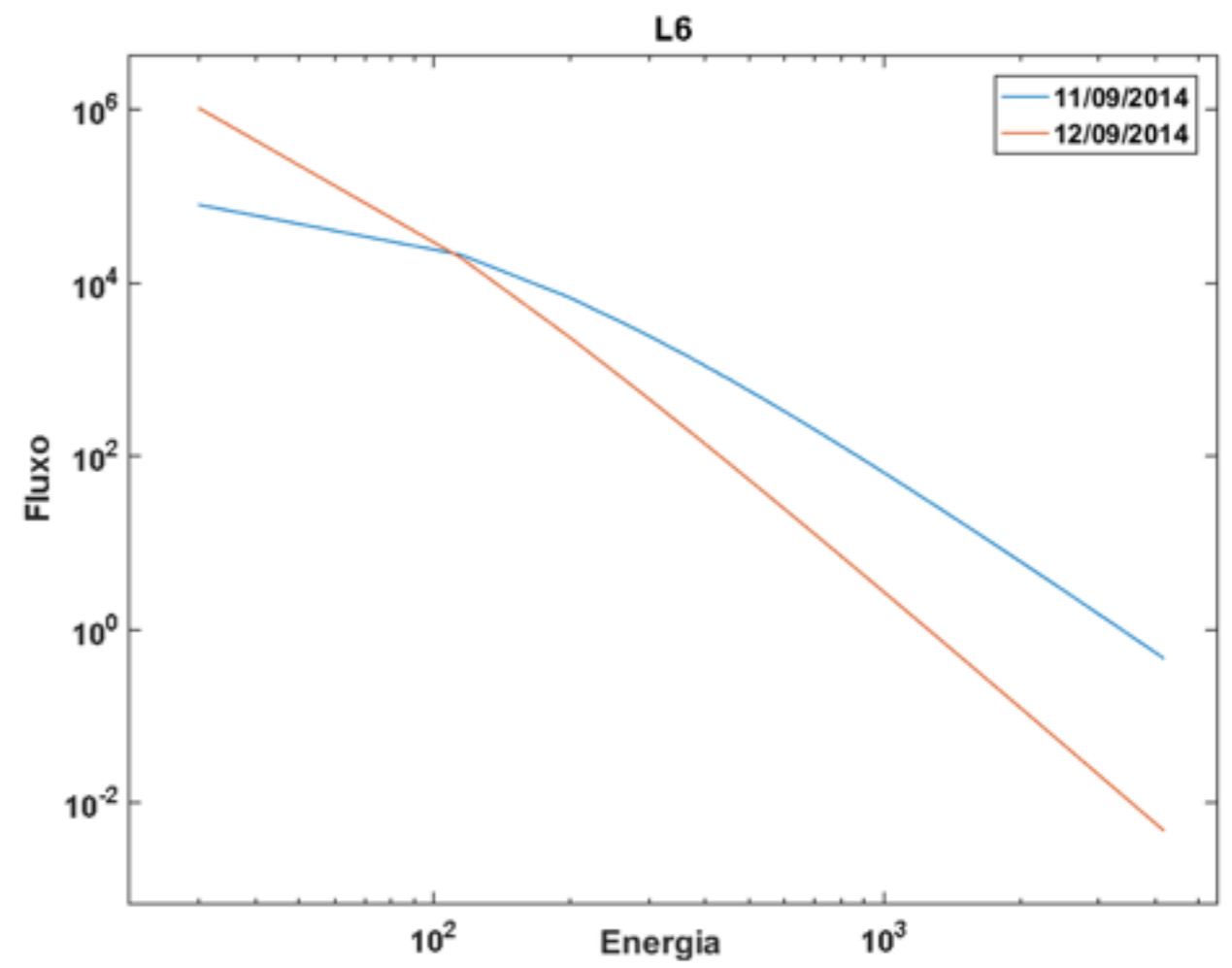
Ajustes



Ajustes

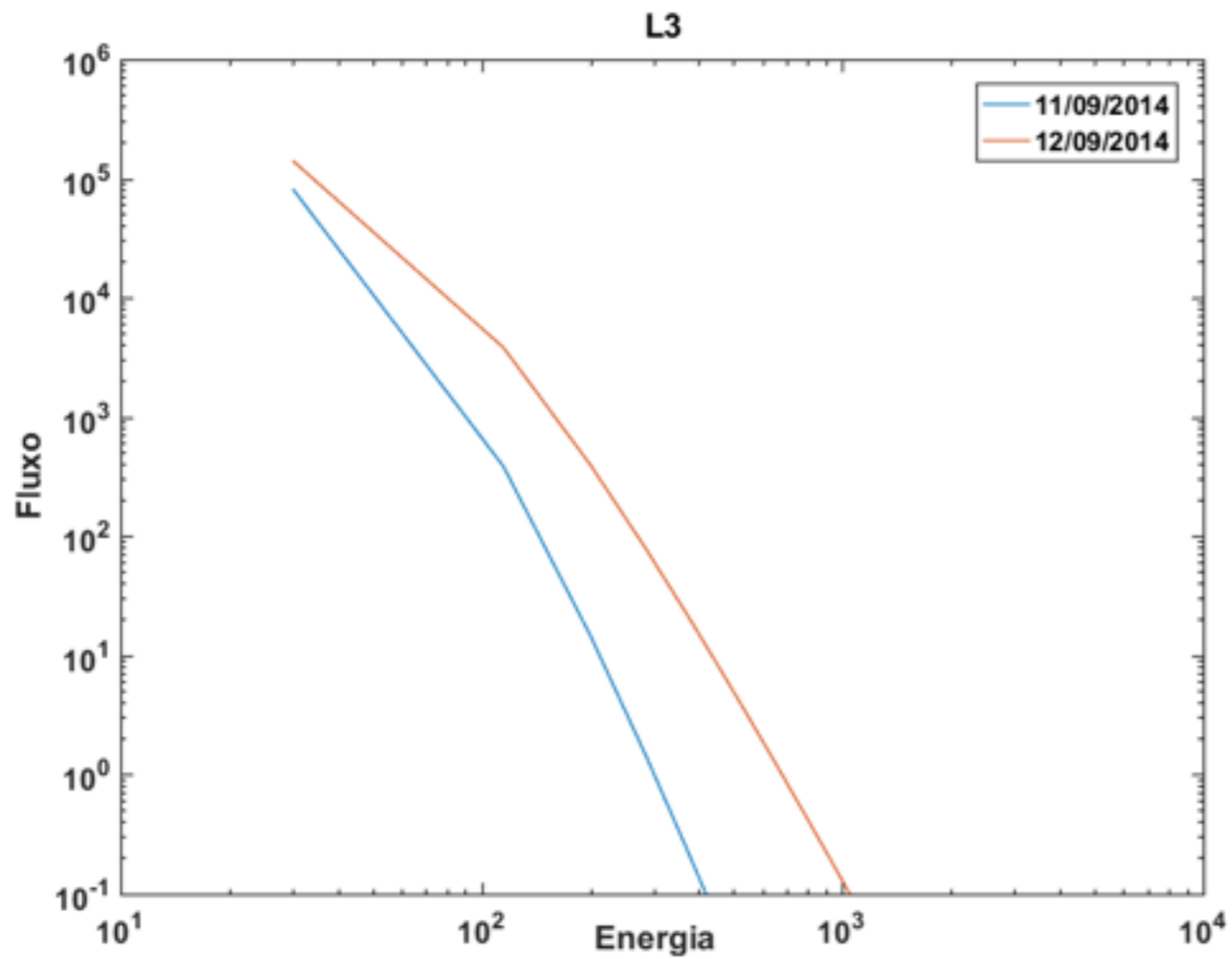


$$\kappa = 3.63 \quad \kappa = 4.49$$

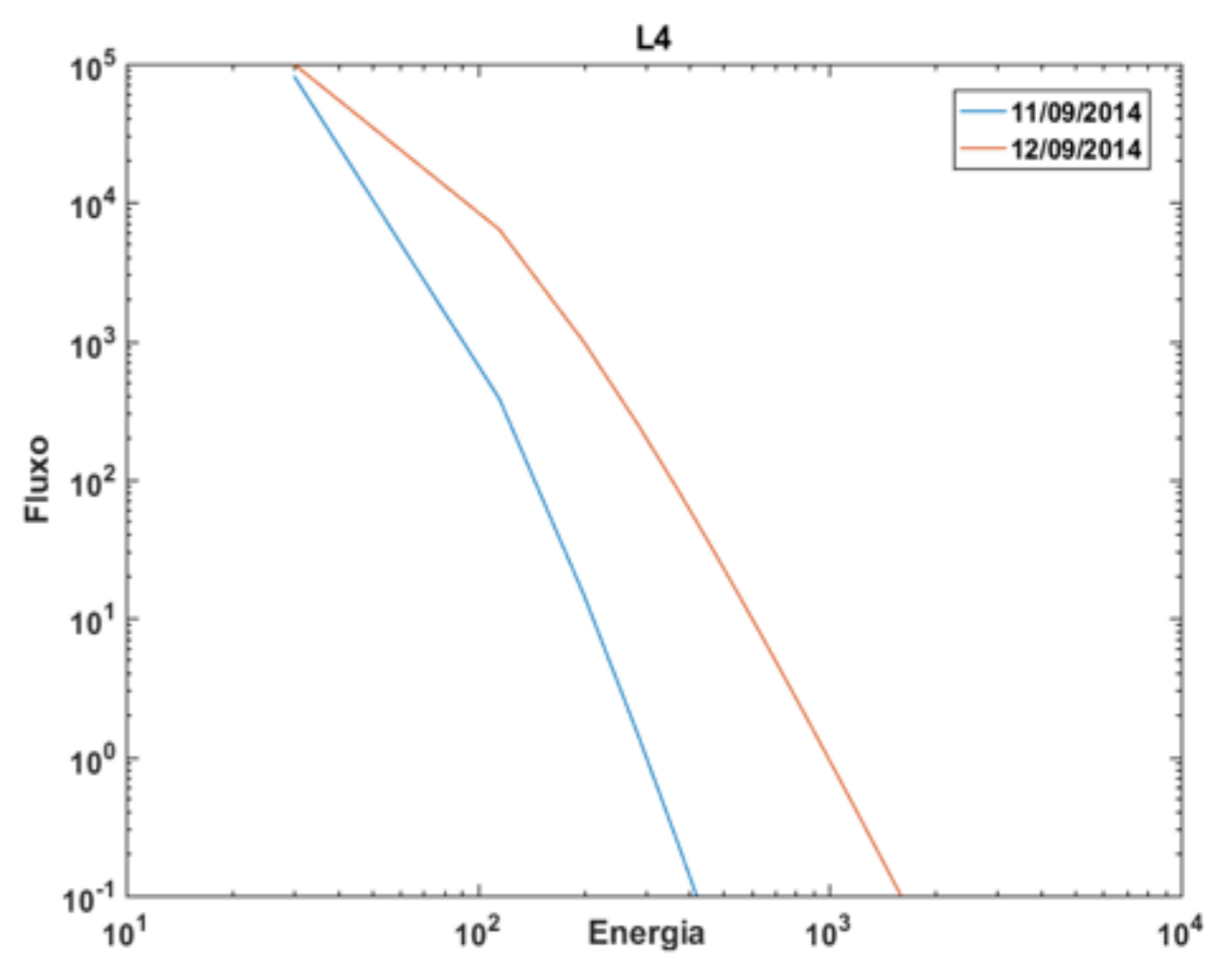


$$\kappa = 2.28 \quad \kappa = 3.15$$

Ajustes



$$\kappa = 8.06 \quad \kappa = 5.07$$



$$\kappa = 8.06 \quad \kappa = 5.68$$

Conclusões

- ❖ Os cinturões de radiação são estruturas dinâmicas;
- ❖ Estudo possui grande importância;
- ❖ A função de distribuição do fluxo possibilita uma ferramenta extra de análise.

Agradecimentos



Referências

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