



Contribution ID: 59

Type: **Poster**

## **Atomic Shannon entropy in astrophysical nonthermal plasmas**

The nonthermal effects on the Shannon entropy for the atomic states are investigated in astrophysical Lorentzian plasmas. The Shannon entropies for the ground and excited states in astrophysical Lorentzian plasmas are also obtained as functions of the spectral index, effective screening lengths, and plasma parameters including the radial and angular parts. It is shown that the nonthermal characteristics of the Lorentzian plasma suppresses the entropy changes in the ground state as well as in the excited states. In addition, it is found that the entropy change in excited states is more effective than that in the ground state in Lorentzian astrophysical plasmas.

### **Mini-abstract**

The Shannon entropy for the atomic states are investigated in astrophysical Lorentzian plasmas.

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**Session Classification:** Poster session 3