



Contribution ID: 273

Type: **Talk in a parallel session**

## The role of electron capture decay in the precision era of Galactic cosmic-ray data

*Tuesday, 9 July 2024 17:00 (15 minutes)*

Electron capture (EC) decay relies on attachment and stripping cross-sections, that in turn, depend on the atomic number of the nucleus. We revisit the impact of EC decay in the context of the high-precision cosmic-ray fluxes measured by the AMS-02 experiment. We derive the solution of the steady-state fluxes in a 1D thin disk model including EC decay. We compare our results with relevant elemental and isotopic fluxes and evaluate the impact of this process, given the precision of recent AMS-02, ACE-CRIS, SuperTIGER, and Voyager data. We find this impact to be at the level or larger than the precision of recently collected data for several species, e.g.  $^{31}\text{Ga}$  and  $^{33}\text{As}$ , indicating that EC decay must be properly taken into account in the calculation.

**Primary authors:** Dr MAURIN, David; VECCHI, Manuela; BORCHIELLINI, Marta

**Presenter:** BORCHIELLINI, Marta

**Session Classification:** AMS-02 experiment at the International Space Station

**Track Classification:** Cosmic Rays and Very High Energy Emission (CR): AMS-02 experiment at the International Space Station