Contribution ID: **85** Type: **Oral Contribution**

Nuclear Beta-decays of highly ionized heavy atoms in stellar interiors: part II

Friday 13 June 2025 09:30 (20 minutes)

The compilation1 of the beta-decay rates, based on the method developed in PART I,2 has been extensively used for various s-process models. Given the advent of a sophisticated modeling of the s-process associated with the thermal pulse/inter-pulse and 3rd dredge-up phase in low-mass stars, and of a possibility of the s-processing in the core/shell carbon burning phase in massive stars, it may be worth improving the beta-decay formalism in PART I on some fronts: 1) updating nuclear input data (ft-values, Q-values), 2) estimating the possible errors in the computed rates, 3) extending the temperature- and density- domains, and 4) removing various approximations and inter-/extrapolations that were necessary in PART I because of the limited computational capabilities and budget (!). This contribution mainly concerns the item 3) & 4).

1 K. Takahashi & K. Yokoi, Atomic Data and Nuclear Data Tables 36, 375-409 (1987)
2 K. Takahashi & K. Yokoi, Nuclear Physics A404, 578-598 (1983)

Author: TAKAHASHI, Kohji

Presenter: TAKAHASHI, Kohji