

# Measurement of two-neutrino double electron capture half-life of Xe-124 with the PandaX-4T detector

*martedì 18 giugno 2024 17:30 (2 ore)*

Two-neutrino double electron capture ( $2\nu\text{DEC}$ ) is a second-order weak interaction process. The half-life of  $2\nu\text{DEC}$  is directly related to that of neutrino-less double electron capture ( $0\nu\text{DEC}$ ) and is of significant importance for revealing the Majorana nature of neutrinos. PandaX-4T is a time projection chamber with 3.7 tons of natural xenon in the active volume, which contains approximately 3.7 kg of Xe-124, a DEC isotope. Using the 655.6 tonne-days of PandaX-4T commissioning Run and the science Run 1 data, we have achieved a precise determination of the  $2\nu\text{DEC}$  half-life for Xe-124 and searched for possible  $0\nu\text{DEC}$  signal.

## Poster prize

Yes

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PandaX

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**Classifica Sessioni:** Poster session and reception 1

**Classificazione della track:** Neutrinoless Double Beta Decay