ID de Contribution: **71** Type: **Non spécifié**

Solving the puzzles of the decay of the heaviest known proton-emitting nucleus 185Bi

lundi 30 janvier 2023 09:35 (20 minutes)

In two experiments at Argonne National Laboratory's ATLAS facility, utilising both the Fragment Mass Analyzer (FMA) and Argonne Gas-Filled Analyzer (AGFA) we have revisited two long-standing puzzles in the decay of ^{185}Bi, which is the heaviest known proton-emitting nucleus. Combining the results from the two complementary experiments has established the existence of an isomeric state in ^{185}Bi and shown that the proton- and alpha-decaying ground state is extremely short. These results, which will be discussed in this seminar, lead to a proton-decay spectroscopic factor which is close to unity and represents the only known example of a ground-state proton decay to a daughter nucleus (^{184}Pb) with a major shell closure. The implications for nuclear structure in this important region of the chart will be discussed as will implications for future work studying proton-emitting nuclei - which continue to yield surprising and fascinating results.

Orateur: DOHERTY, Dan (University of Surrey, UK)

Classification de Session: Session 1: Recent achievements in the study of ptoron emitters