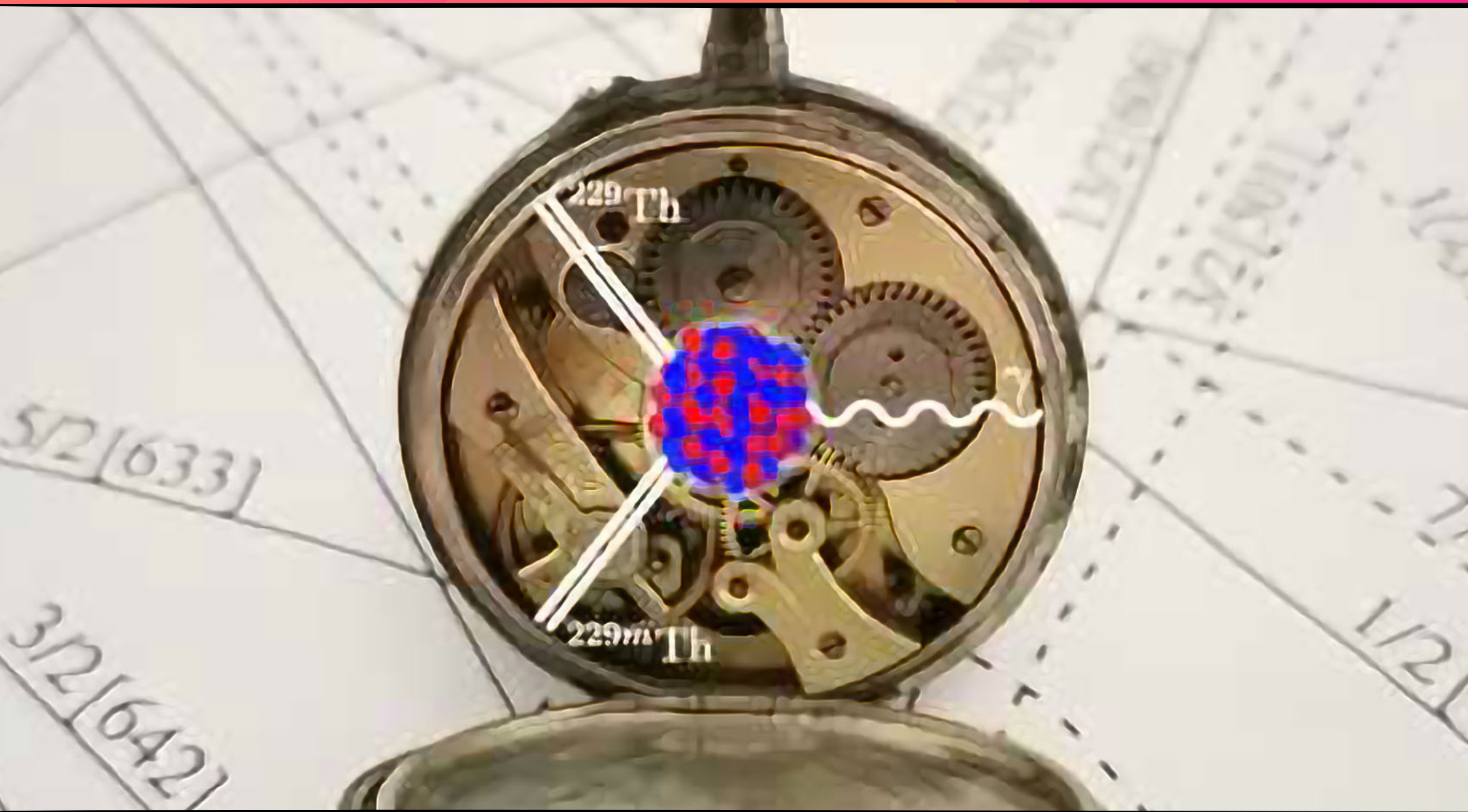


PHYSICS COLLOQUIA 2025



FEB
18

SANDRO KRAEMER | KU Leuven (BEL)

The Low-Energy Thorium-229 Isomer: En Route towards a Nuclear Clock

3:00 pm | Classroom A | Via Celoria 16 | Milan

The radioisotope thorium-229 features an isomeric state with an exceptionally low excitation energy of around 8eV allowing for direct laser-manipulation of a nucleus. Based on the ground-state transition, various applications have been proposed, including a precise timekeeping instrument, the nuclear clock.

This instrument is expected to deliver significant contributions to fundamental physics studies and allows for the first time the development of an integrated fully solid-state-based optical clock.

This talk will introduce the nuclear clock, review current development efforts towards its realization and highlight the contribution of recent experiments with radioactive ion beams.



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