THE PHYSICS COLLOQUIUM

Thursday 30 May 2024, 4:00 p.m.
Nijenborgh 4, Lecture Hall 5111.0080

What can one radioactive ion tell us about the universe? Studies at TITAN-TRIUMF

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The atomic mass provides a snapshot of the total interaction among every constituent particle. This manifestation of the nuclear force reveals the evolution of nuclear shells (analogous to electron shells) and exotic structures in radioactive nuclides.

Moreover, mass dictates the pathways accessible in stellar burning, influencing how the elements were formed. The highest-precision mass measurements are critical inputs into rigorous tests of the Standard Model. The necessary precision is achieved through ion-trapping techniques.

In an ion trap, a single ion (or a whole cloud) can be manipulated, measured, and stored with increasingly sophisticated and exquisite control. As such they are my tool of choice at TRIUMF's Ion Trap for Atomic and Nuclear science (TITAN), where ground-state properties are measured in the fraction of a second these radioactive ions live. I will provide an overview of the techniques and describe some scientific highlights.

Join us for coffee starting 3:30 p.m. Refreshments will be served after the lecture.

For more information contact the host: Julia Even (j.even@rug.nl)
Website: http://www.rug.nl/research/vsi/colloquia/