ID de Contribution: **83** Type: **Non spécifié**

Superheavy Elements with FIONA (remote)

lundi 30 janvier 2023 16:20 (10 minutes)

The search for new elements has netted us six additions to the periodic table this decade, bringing the total to 118 known elements. These elements must be formed one-atom-at-a-time in complete-fusion evaporation reaction. Once formed, the atoms typically exist for just seconds or less before they decay into other elements. While we have made great progress in making and studying these elements, there is much that is still unknown –including things as basic as the proton and neutron numbers of the recently discovered elements.

Recently, the Berkeley Gas-filled Separator (BGS) at the Lawrence Berkeley National Laboratory (LBNL) was coupled to a new mass analyzer, FIONA. The goal of BGS+FIONA is to provide a M/ΔM separation of ~300 and transport nuclear reaction products to a shielded detector station on the tens of milliseconds timescale. These upgrades will allow for direct A and Z identification of ii) new actinide and transactinide isotopes with ambiguous decay signatures such as electron capture or spontaneous fission decay and i) superheavy nuclei such as those produced in the ^{48}Ca + actinide reactions. Here we will present recent results from first FIONA scientific experiments.

Orateur: GATES, Jacklyn (awrence Berkeley National Laboratory)

Classification de Session: Session 3: Spectroscopy of heavy and super-heavy nuclei