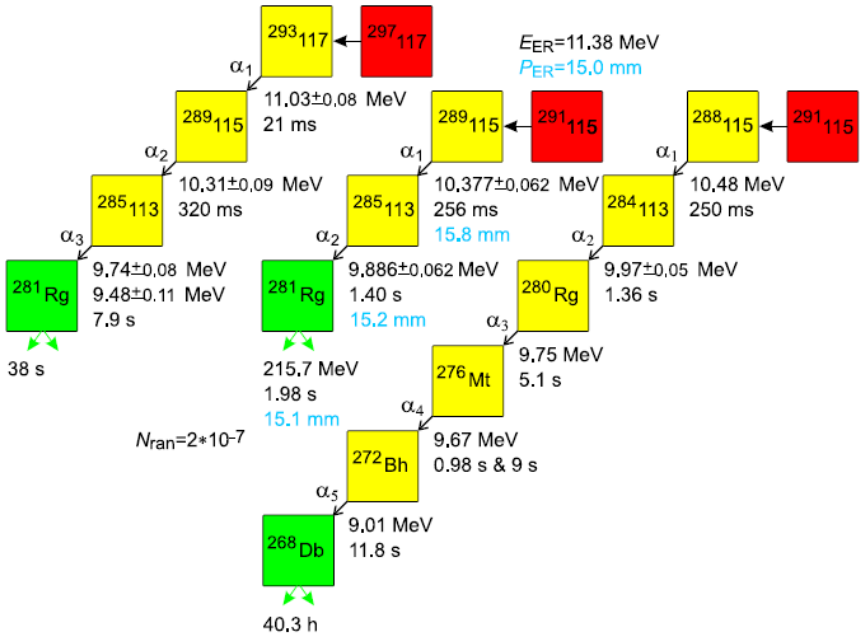
Ramping up production in superheavy science

- **For the first time, over twenty decay chains of super heavy nuclei, ^{288}(115) and ^{289}(115), were observed during one experimental campaign by the Russia-US collaboration (Dubna-Oak Ridge-Livermore-Vanderbilt)**
- **Creating new chemical elements are among the most challenging scientific endeavors. These investigations capture the imagination, provide sensitive tests of nuclear theories and chemistry and expand the Periodic Table to atomic numbers that seemed unreachable a decade ago.**
- **However, these studies have required months to several years, and despite such efforts, a successful campaign typically yielded only a few nuclei of a superheavy element.**
- **In summary, the newly identified decay chains greatly expand earlier observations of a few ^{288}(115) and ^{284}(113) nuclei identified at Dubna in 2004-2005. In addition, ^{289}(115) nuclei were produced in the same reaction [1]. These nuclei share common properties with the decay daughter of the mass 293 isotope of the newly-discovered element 117, providing an additional evidence for that discovery.**



Decay properties of Z=117 and Z=115 isotopes averaged over observed five ^{293}(117) chains and twenty four ^{288}(115) chains [1]. The decay pattern of directly produced ^{289}(115) isotope provides an additional evidence for the recent identification of 293(117) nucleus [2].

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[1] Y. Oganessian et al, Phys. Rev. Lett. 108, 022502, 2012.

[2] Y. Oganessian et al., Phys. Rev.Lett. 104, 142502, 2010.

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