

Discovery of ^{72}Rb : A Nuclear Sandbank Beyond the Proton Drip Line

H. Suzuki *et al.*, Phys. Rev. Lett. **119**, 192503 (2017)

March 21, 2018

1. What is the Nilsson model? What is a Nilsson proton quasiparticle? **(Som)**
2. How is the difference between the expected and observed counts used to get the particles' half-life in Fig. 2? Why do we only have an upper limit for ^{73}Rb ? **(Abinash)**
3. What is the working principle of ZeroDegree Spectrometer? How is it different from other common spectrometers used in other experiments? **(Robert)**
4. What are mirror nuclei? How reasonable is the assumption of mirror symmetry? **(Bishnu)**
5. What is an X-ray burst? Why are waiting point nuclei in the (r p) process important for the X-ray burst phenomenon? **(Kristyn)**
6. What is the deformation parameter (β_2)? How does its value affect the ground state spin and parity of a nucleus? **(Mamun)**
7. What is the difference between the proton and neutron drip lines? What physical phenomenon could be the reason that ^{72}Rb has a longer half-life than ^{73}Rb ? Could "pairing" of BCS type be a reason? **(Sudhanva)**
8. What more information can we get from the proton-delayed γ -rays and the β^- which are detected in the EURICA array? **(Mahesh)**