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Analysis Update on the Lifetime Measurement of the ^{26}O g.s. at SAMURAI

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A recent experiment suggests that the ground state of the neutron-unbound nucleus ^{26}O could have a lifetime in the pico-second regime. This would constitute the first case of a radioactive decay via neutron emission, if this value can be confirmed.

In Dezember 2016, the S20 experiment using a new measurement method to determine the decay lifetime of the ^{26}O ground state with high sensitivity and precision was performed at SAMURAI. Here, a ^{27}F beam was produced in the fragment separator BigRIPS and impinged on a W/Pt target stack where ^{26}O was produced. According to the lifetime, the decay of ^{26}O happens either in- or outside the target. Thus, the velocity difference between the decay neutrons and the fragment ^{24}O delivers a characteristic spectrum from which the lifetime can be extracted.

The current analysis status will be reported.

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