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AGATA@GANIL(E676) (ONLINE): Lifetime measurements of excited states in neutron-rich C and O isotopes: a stringent test of the three body forces with the AGATA+PARIS+VAMOS setup

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Light neutron-rich nuclei, such as C and N isotopes, are a fertile ground for nuclear structure and nuclear astrophysics studies. Several nuclei in this region were populated in an experiment realised in GANIL, employing the deep-inelastic reaction ^{18}O (7.0 MeV/A) + ^{181}Ta and studied exploiting the state-of-the-art AGATA gamma-tracking array, coupled to the PARIS scintillation array and to the VAMOS++ recoil spectrometer. We will report on high-resolution gamma-spectroscopy investigations, focussing on the cases of ^{14}C and $^{18;19}$N , where new gamma transitions have been observed and state lifetimes have been measured, to benchmark ab initio ad large-scale Shell-Model theory predictions.

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