

Abstract Submitted
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Lifetime and proton component of the 2_1^+ state in ^{16}C MARINA PETRI, Lawrence Berkeley National Laboratory, KÖLN/NSCL PLUNGER (NSCL EXPERIMENT E07023) COLLABORATION — The lifetime of the 2_1^+ state in ^{16}C was measured using the Recoil Distance Method with fast radioactive beams at the National Superconducting Cyclotron Laboratory. The lifetime of 11.4 ± 0.3 ps, corresponding to a $B(E2:2_1^+ \rightarrow 0_{g.s.}^+) = 4.21 \pm 0.11 \text{ e}^2\text{fm}^4$, is in good agreement with previous values [1]. Excited states in ^{16}C were populated via the $^9\text{Be}(^{17}\text{N}, ^{16}\text{C}+\gamma)\text{X}$ one-proton knockout reaction. The one-proton knockout cross section is used to extract the proton component of the ^{16}C 2_1^+ state. Gamma branching ratios between excited states were also determined. The $B(E2)$ and branching ratios will be compared with p-sd shell model and no core shell model (with NN and NN+NNN) calculations.

[1] M. Wiedeking et al., Phys. Rev. Lett., 100, 152501 (2008).

Marina Petri
Lawrence Berkeley National Laboratory

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