

Abstract Submitted
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In-beam gamma-ray studies of neutron-rich $N \sim 20$ nuclei in fragmentation reactions E. RODRIGUEZ-VIEITEZ, R.M. CLARK, M. CROMAZ, M.-A. DELEPLANQUE, M. DESCOVICH, P. FALLON, I.-Y. LEE, A.O. MACCHIAVELLI, F.S. STEPHENS, D. WARD, M. WIEDEKING, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, S.G. PRUSSIN, University of California, Berkeley, CA 94720, D. BAZIN, C.M. CAMPBELL, J.M. COOK, D.-C. DINCA, A. GADE, T. GLASMACHER, W.F. MUELLER, K. YONEDA, Michigan State University, East Lansing, MI 48824 — Neutron-rich sodium, neon, and fluorine nuclei were produced in a two-step fragmentation/knockout experiment conducted at Michigan State University. A 140 MeV/A ^{48}Ca primary beam bombarded a ^9Be target to produce a “cocktail” of secondary beams ($^{29}\text{Na}/^{30}\text{Mg}/^{32}\text{Al}$ and $^{32}\text{Mg}/^{33}\text{Al}/^{35}\text{Si}$). The secondary beams underwent fragmentation/knockout reactions on a second ^9Be target located at the center of the Segmented Germanium Array (SeGA), which was used to measure the prompt gamma-ray decays tagged to specific fragments detected at the S800 focal plane. New high quality data on a range of nuclei were obtained, e.g. $^{30,31}\text{Na}$, $^{28,29,30}\text{Ne}$, and $^{25,26}\text{F}$. In ^{30}Na , for example, we observed seven gamma-ray transitions and the statistics allowed the study of gamma-gamma coincidences. These data will provide new information on the structure of these exotic nuclei and specifically the role of collective degrees of freedom and the strong n-p spin-isospin interaction.

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