Experimental techniques to use the \((d,n)\) reaction for spectroscopy of low-lying proton-resonances\(^1\) INGO WIEDENHOEVER, ALEXANDER ROJAS, LAGY T. BABY, JESSICA BAKER, SEAN KUVIN, PATRICK PEPLOWSKI, DANIEL SANTIAGO-GONZALEZ, Florida State University, GEORGIOS PERDIKAKIS, National Superconducting Cyclotron Lab, Michigan State University, DENNIS L. GAY, University of North Florida, Jacksonville — Studies of rp-process nucleosynthesis in stellar explosions show that establishing the lowest \(l = 0\) and \(l = 1\) resonances is the most important step to determine reaction rates in the astrophysical rp-process path. At the RESOLUT facility, we have used the \((d,n)\) reaction to populate the lowest \(p\)– resonances in \(^{26}\)Si, and demonstrated the usefulness of this approach to populate the resonances of astrophysical interest\(^1\). In order to establish the \((d,n)\) reaction as a standard technique for the spectroscopy of astrophysical resonances, we have developed a compact setup of low-energy Neutron-detectors, RESONEUT and tested it with the stable beam reaction \(^{12}\)C\((d,n)^{13}\)N in inverse kinematics. Performance data from this test-experiment and future plans for this setup will be presented.

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