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## Experimental techniques to use the (d,n) reaction for spectroscopy of low-lying proton-resonances

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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  $^{26}\text{Si}$ , 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  $^{12}\text{C}(\text{d},\text{n})^{13}\text{N}$  in inverse kinematics. Most recently, the detectors were included in a study of the radioactive beam reaction  $^{17}\text{F}(\text{d},\text{n})^{18}\text{Ne}$  in inverse kinematics. Performance data from these experiments will be presented. P.N. Peplowski *et al.* Phys.Rev. **C 79**, 032801 (2009)

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