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## Characterization of Cluster States in <sup>16</sup>0 with the (p,t) reaction

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Motivated by several theoretical cluster calculations that predict the existence of the 0<sub>6</sub><sup>

+</sup> state in <sup>16</sup>O located at 15.1 MeV as a very good candidate for the equivalence of the Hoyle state in <sup>12</sup>C, a high resolution measurement of <sup>16</sup>O spectrum in coincidence with the <sup>16</sup>O decay products was proposed using a (p,t) reaction at 200 MeV and 0<sup>o</sup>. The decay products of the excited <sup>16</sup>O recoil nucleus were detected by means of Double Sided Silicon Detectors and the outgoing tritons were identified in the K600 magnetic spectrometer focal plane. Data were collected with targets containing <sup>18</sup>O, <sup>16</sup>O, <sup>12</sup>C and <sup>7</sup>Li. First results on precise measurement of energy spectra of the corresponding recoil nuclei using the K600 as the master trigger and extracted cross sections will be discussed.

## Level (Hons, MSc, <br> &nbsp; PhD, other)?

Researcher

## Consider for a student <br> &nbsp; award (Yes / No)?

No

## Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?

Yes

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