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### Investigating the candidate 5-alpha cluster state in 20Ne at Ex = 22.5 MeV with the 22Ne(p, t)20Ne reaction.

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The study of alpha-cluster in light nuclei have been well documented with experimental evidences. Meanwhile, in the recent experiments performed at iThemba LABS using (p,t) reaction on 22Ne with the K600 magnetic spectrometer, a 22.5 MeV state was found, which accounts for 5-alpha cluster situated at 3.3 MeV above the 5-alpha break-up threshold. However, this state could not be accounted for by theoretical shell-model calculations and angular distribution data taken at forward angles including zero degrees. In the present project, (p, t) reaction on 22Ne will be carried out at zero degrees, to ascertain whether this state exist or not. A proton beam with an energy of Elab= 80 MeV from the Separated Sector Cyclotron (SSC) facility impinged on a 22Ne gas target at lab angles of  $\Theta$ lab= 00 was considered. Preliminary results of these experiments will be discussed.

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