

**INDIRECT STUDIES OF α -INDUCED REACTIONS WITH SHARC/TIGRESS:
 $^{15}\text{O}(\alpha,\gamma)^{19}\text{Ne}$**

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The $^{15}\text{O}(\alpha,\gamma)^{19}\text{Ne}$ reaction is one of a number of important α -induced reactions occurring in X-ray bursts. Direct study of this reaction is not feasible with current ^{15}O beam intensities so indirect methods are commonly used to calculate the reaction rate. Many of the astrophysically relevant states have small α branching ratios, meaning that determination of α widths remains difficult.

In this talk, the astrophysical motivation for measuring the $^{15}\text{O}(\alpha,\gamma)^{19}\text{Ne}$ reaction is laid out, along with previous attempts to study the relevant physical parameters of α -unbound states in ^{19}Ne . A forthcoming measurement of the $^{15}\text{O}(\alpha,\gamma)^{19}\text{Ne}$ using the SHARC (Silicon Highly segmented Array for Reactions and Coulex) and TIGRESS (TRIUMF-ISAC Gamma-Ray Escape-Suppressed Spectrometer) arrays at TRIUMF via the $^{15}\text{O}(^6\text{Li},d)^{19}\text{Ne}$ reaction will be discussed, along with some of the advantages and disadvantages of $(^6\text{Li},d)$ and $(^7\text{Li},t)$ for probing α widths.