A Compilation of Information on the $^{31}$P(p,$\alpha$)$^{28}$Si Reaction and Properties of Excited Levels in the Compound Nucleus $^{32}$S

by

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Abstract

This report documents a survey of the literature, and provides a compilation of data contained therein, for the $^{31}$P(p,$\alpha$)$^{28}$Si reaction. Attention is paid here to resonance states in the compound-nuclear system $^{32}$S formed by $^{31}$P + p, with emphasis on the alpha-particle decay channels, $^{28}$Si + $\alpha$ which populate specific levels in $^{28}$Si. The energy region near the proton separation energy for $^{32}$S is especially important in this context for applications in nuclear astrophysics. Properties of the excited states in $^{28}$Si are also considered. Summaries of all the located references are provided and numerical data contained in them are compiled in EXFOR format where applicable.

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