Experimental study of the ^{29}Si(p,γ)^{30}P reaction for classical nova nucleosynthesis

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^{29}Si is believed to be produced during classical nova events. After these explosive events, stardust grains can be closed into meteorites. Therefore, the measurements of the isotopic ratios in meteorites can be related to the amount of ^{29}Si produced by classical nova events. However, there is no unambiguous evidence for the nova paternity of presolar stardust grains. Thus, it is important to know precisely how much ^{29}Si is produced in classical novae.

To do reliable theoretical models, it is necessary to know the reaction rate of the ^{29}Si(p,γ)^{30}P reaction at astrophysically relevant energies. The cross section of the reaction is fundamental to make the reaction rate calculations.

The direct capture cross section of the ^{29}Si(p,γ)^{30}P has not been measured before. For some low energy resonances, ambiguous data can be found in the literature. In this talk I present the details of the experimental procedure aiming at the measurement of these quantities: the direct capture cross section and the resonance strength of a low-energy resonance.