

**LABORATORI NAZIONALI DEL GRAN SASSO**

**SEMINAR ANNOUNCEMENT**

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***Uncertainties in the  
determination  $S_{34}$***

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*The rate of  ${}^3\text{He}(\alpha, n){}^7\text{Li}$  plays a key role in the production of  ${}^7\text{Li}$  during the Big Bang Nucleosynthesis as well as in stellar hydrogen burning, where it has a strong influence on the high energy component of the solar neutrino spectrum. In the last decades several experiments exploited either the detection of the prompt gamma-rays or the off-line determination of the number of  ${}^7\text{Be}$  atoms collected in the target, in few cases both.*

*Recently the total cross section has been measured also through the direct detection of the  ${}^7\text{Be}$  recoils using the recoil mass separator ERNA. Although analyses based on single experiments achieve a precision of 3% a combined analysis of the existing data sets, on a large energy window, is needed in order to select among the several available theoretical models. In this framework the uncertainty on  $S_{34}$  is critically reviewed and discussed.*

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