

**LABORATORI NAZIONALI DEL GRAN SASSO**

**SEMINAR ANNOUNCEMENT**

**Stefano Davini (Genova University)**

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***“First evidence of pep solar  
neutrinos by direct detection in  
Borexino 1”***

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*We have measured the rate of pep solar neutrino interactions in Borexino to be  $3.13 \pm 0.55(\text{stat}) \pm 0.23(\text{syst})$  counts/(day·100 ton) and constrained the CNO solar neutrino interaction rate to  $< 7.6$  counts/(day·100 ton) (95% C.L.). This has been possible adopting novel data analysis techniques for the rejection of the dominating background in the 1–2MeV region, cosmogenic  $^{11}\text{C}$ . Assuming the MSW-LMA solution to solar neutrino oscillations, these values correspond to solar neutrino fluxes of  $(1.6 \pm 0.3) \times 10^8 \text{ cm}^{-2}\text{s}^{-1}$  and  $< 7.4 \times 10^8 \text{ cm}^{-2}\text{s}^{-1}$  (95% C.L.), respectively, in agreement with the Standard Solar Model. These results represent the first measurement of the pep neutrino flux and the strongest constraint of the CNO solar neutrino flux to date.*

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LNGS - “E. MAJORANA” ROOM**