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Poster Session - Submission of Abstract

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Title of the Poster: Present and future of solar neutrino physics

Abstract Text: Solar neutrinos contributed significantly to the development of elementary particle physics and astrophysics. After the results that at the turn of millennium solved the Solar Neutrino Puzzle, proving that neutrinos are massive and oscillating particles, in the last decade solar neutrino experiments and KamLAND went on producing a great amount of data. We revise these results and the parallel phenomenological analyses, discussing the emerging general picture of mixing and masses and the impact on solar models. We focus in particular on the main open issues, like the study of low and medium energy part of the spectrum (and the anomalies that seem to emerge) and the solar metallicity problem. We discuss the potentialities of different future experiments already approved or under discussion.

Summary: Solar neutrino historical relevance and present role in elementary particle physics and astrophysics. Oscillations, masses, mixing, solar models. Recent results of the experiments already active in this field (SNO, SuperKamiokande and impact of the KamLAND results); advent of Borexino and its results; global phenomenological analyses and experimental issues. Discussion about the open issues and the characteristics and potentialities of different future experiments.