

**Lundi 21 mai à 15 h**

---

**First Results from the MiniBooNE  
oscillation experiment at Fermilab**

***A. Curioni (Yale)***

---

I will report the initial results from a search for oscillations of muon neutrino to electron neutrino performed by the MiniBooNE Collaboration. MiniBooNE was motivated by the result from the LSND experiment which presented evidence for oscillations at the  $\Delta m^2$  scale around  $1 \text{ eV}^2$ . The MiniBooNE experiment uses a high intensity neutrino beam produced by protons from the Fermilab Booster accelerator. The average muon neutrino energy for this beam is  $\sim 800 \text{ MeV}$ . Neutrinos are detected in 1 kton pure mineral oil instrumented with about 1500 photomultiplier tubes. The detector is placed 540 m away from the production target and is used to discriminate between muon and electron neutrino events, and to measure the energy of the neutrinos. MiniBooNE performed a "blind" analysis, where all analysis selections and fitting procedures are determined before candidate electron neutrino events are examined. Results of this analysis will be presented for the current neutrino mode data set corresponding to  $5.58 \cdot 10^{20}$  protons on target.

---

**Exotic neutrino physics in the light of LSND, MiniBooNE and  
other data: a short review**

***M. Cirelli, S. Lavignac (SPHT)***

---

We review several non-standard phenomena in neutrino physics (mixing with sterile neutrinos, mass varying neutrinos, CPT violation, extra dimensions...), and discuss the main constraints on these scenarios coming from particle physics, astrophysics and cosmology. The implications of the recent MiniBooNE results are also discussed on a qualitative basis.

---

**Salle André Berthelot, bât. 141**

Le café sera servi 15 minutes avant

NB : La présentation d'une carte d'identité ou d'un passeport est exigée à l'entrée du centre. Tous les auditeurs extérieurs sont priés de prévenir à l'avance de leur visite Emilie Chancrin, tél. 01 69 08 23 50 (U.E. : délai de 24 h, hors U.E. : délai de 4 jours).