Contribution ID: **33** Type: **not specified**

Neutron scattering and extra interactions in the range between 1 pm and 5 nm

Wednesday, 23 January 2008 10:35 (20 minutes)

Scattering of slow neutrons at nuclei results from very weak interaction: electromagnetism is nearly absent because of electrical neutrality of neutrons, and nuclear interaction is effectively weak because of its short range. Thus, available neutron scattering data appear to be sensitive to new interactions beyond the standard model. I will show that constraints on new short-range interactions can be obtained in several independent ways, all providing limits of several orders of magnitude better than those usually cited in the range between 1pm and 5 nm.

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Session Classification: Contraintes sur la nouvelle physique