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Simulation of Antineutrino Rate From SONGS Reactor With DRAGON

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Single-detector reactor-based oscillation experiments, like the first run of Double Chooz, require accurate predictions of the reactor flux. In this talk I present results from the deterministic lattice code DRAGON, which is used to simulate the nuclear fission rates of uranium and plutonium isotopes. These fission rates are then convoluted with the inverse beta decay cross section to obtain a prediction of the antineutrino rate as a function of time from the San Onofre Nuclear Generating Station (SONGS) reactor. The results are compared with data from the SONGS antineutrino detector.

Applications to both nuclear nonproliferation and neutrino oscillation experiments are briefly discussed.

Author: M. JONES, Christopher (Massachusetts Institute of Technology)Orateur: M. JONES, Christopher (Massachusetts Institute of Technology)Classification de Session: Young Scientist Forum 3

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