Search for Possible Neutrino Decay During the 1999 Solar Eclipse

Cecchini, S^1 , Giacomelli, G^1 , Hasegan, D^2 , Mandrioli, G^1 , Maris, O^2 , Patrizii, L^1 , Popa, V^2 ,

Stefanov, L²

¹Dept. of Physics and INFN, 40126 Bologna, Italy ²Institute for Space Sciences, 76900 Bucharest, Romania

Abstract

The solar neutrino problem could arise from the oscillation of one neutrino type into a second type. Neutrinos would have a mass and there could be the possibility of radiative neutrino decays. We discuss the search for neutrino decays during the 1999 total solar eclipse: it involves the emitted visible photons, while neutrinos travel from the Moon to the Earth. The concept and the main characteristics of the NOTTE experiment (Neutrino Oscillations with Telescopes during the Total Eclipse) are presented.