

HORIZONTAL AND UPWARD TAU AIRSHOWERS IN VALLEYS, MOUNTAINS AND SPACE: DISCOVERING UHE NEUTRINOS AND NEW PHYSICS

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Horizontal Tau Air Showers in Deep Valleys may originate by the decay in flight of Ultrarelativistic Tau, produced by UHE neutrino interacting in surrounding mountain chains. At 10^{14} - 10^{18} eV energies this Horizontal UHE Tau may probe very easily UHE Neutrino (and Anti-Neutrino) Tau Astrophysics if, as SuperKamiokande showed, neutrino muons oscillate into tau ones. At fews PeVs energies, near the Glashow peak, the Tau AirShower must reveal (anyway) UHE Anti Neutrinos Electrons, even in absence of SK neutrino mixing. New neutrino interactions and New Fundamental Physics may also be tested. Upward Tau Airshowers observed from Mountains,Balloons,Airlines and Satellites from Earth and Horizont have very unique Shower Spectra,Timing and Composition. Tau Airshower monitoring UHE Neutrinos from Space offers an effective Detector Volume equivalent to nearly a hundred Cubic Kilometer ones. The unexpected 78 Upward Gamma Flashes observed by GRO satellite in last decade BATSE records, are very probably (10^{-5}) the very expected Upward Tau Airshower produced by the Astrophysical UHE Tau Neutrino at PeVs energies.