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A no tau neutrino appearance and a no Glashow resonance suggest an absent neutrino astronomy

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Since a decade the cube kilometer IceCube neutrino detector did collect several hundreds of thousands of neutrinos events spread over the sky, at TeVs energies, all the atmospheric nature, mainly dominated by muon track component. However, in the last four years the sudden rise above 60 TeV up PeV energy neutrino of 54 events, whose main signature (cascade showers) became suggestive of the injection by a new, expected, ruling astrophysical component. Indeed, the GRB average power fluence is comparable with the observed new neutrino cascade signals. But no GRB among a thousand was found correlated with those neutrino tracks or cascades. Nor blazing AGN or BL Lac correlated with these new astrophysical highest energy neutrino events. Moreover, there is a dozen of neutrino events above 200 TeV whose flavor is not yet showering as a tau flavor, even it could be observed by its double bang. Finally, at 6.3 PeV energy, a Glashow resonance might rise by antineutrino electron scattering on electrons. This resonance, greatly enhanced respect more common neutrino-nucleon interaction, is absent. Either a sudden cut off should occur or some puzzle is wondering. These chains of missing observations stand in favor of a radical solution: most (at least two thirds) of the observed signals are just prompt charmed atmospheric neutrino; maybe only a minor component of an astrophysical nature might be a part of these highest energy IceCube neutrinos. The tau appearance is a key prove (and its absence, a disclaimer) of any neutrino astronomy.

Biography

Daniele Fargion is an Italian Physics Professor of Rome University 1, associated INFN, he completed his first degree at Technion, Israel. He had published more than 163 papers in reputed journals and has been serving as an Editorial Board Member of reputed journal.

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