



Contribution ID: 0

Type: **not specified**

The birth of a near Universe UHECR Astronomy?

Wednesday 20 August 2014 16:20 (20 minutes)

Summary

The highest energy (contained) neutrino events in ICECUBE did provide within three years as many as 34 (tens-hundred TeV) energetic signals and additional 3 rarest PeV cascades shower. Their flux exceeded the atmospheric noise and favored the birth of a long waited extraterrestrial ν Astronomy. Indeed their flavor showed a fast revolutionary transition from ν_μ atmospheric rule at TeV toward a cascade (ν_e, ν_τ) tracks at few tens TeV up to PeV energy. The majority (29) of all these events are indeed spherical cascade shower and their exact timing in shining provided an approximate ν arrival direction. However their map are inconclusive: such a wide angle $\pm 10^\circ$ spread signal, their paucity do not allow yet to define any meaning-full source correlation. The rarest 8 muon tracks did not offer any sharp clustering nor even any clear overlapping within known sources. Larger sample of signals and a more accurate directionality is needed. We recently suggested the highest energy (tens-TeV) muon crossing along the ICECUBE, mostly at horizons or upcoming, as the ideal tool able to reveal soon such clustering or even any narrow angle pointing to known (IR, X, Radio or γ) sources or self-correlation in rare doublet or triplet: a hope for a meaningful ν Astronomy. Any unexpected smeared muons clustering along galactic sources might be also signals of UHECR radioactive decay in flight. Within three years of ICECUBE data all the un-contained crossing highest energy muons above few tens TeV maybe several dozens, possibly around 60, mostly enhanced along horizontal edges (but also reinforced in up-going events) painting, known sources and-or self correlating in doublets or rarest triplet, solving finally the UHE neutrino source puzzle.

Read <http://arxiv.org/abs/1404.5914>

Author: Prof. FARGION, Daniele (Rome University 1 Sapienza and INFN)

Presenter: Prof. FARGION, Daniele (Rome University 1 Sapienza and INFN)

Session Classification: Highlight talks 3