



Contribution ID: 54

Type: **not specified**

gSeaGen: a GENIE-based code for neutrino telescope

Tuesday, 15 September 2015 16:30 (20 minutes)

The gSeaGen code simulates neutrino-induced events detectable by an underwater neutrino detector. The code is an application based on GENIE (Generates Events for Neutrino Interaction Experiments), a set of libraries developed with the purpose to have a “canonical” Monte Carlo for neutrino interaction physics. The gSeaGen code is able to generate events induced by all neutrino flavours, taking into account topological differences between track-type and shower-like events. The neutrino interaction is simulated taking into account the density and the composition of the media surrounding the detector. The main features of gSeaGen will be presented together with some examples of its application within ANTARES and KM3NeT.

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Session Classification: Parallel Session H