## NuCo 2022: Neutrinos en Colombia



Contribution ID: 8

Type: not specified

## The Qualitative (Potential) Applications of Artificial Mathematical Intelligence to the Deep Underground Neutrino Experiment

Wednesday 27 July 2022 15:30 (30 minutes)

Classic artificial intelligence like deep learning is typically used to make sense and to understand the big amount of data obtained in huge and fundamental physical experiments like ATLAS, CMS, LHCb, NOvA, Alice, among others. On the other hand, Artificial Mathematical Intelligence (AMI) is nowadays emerging as a new global form of conceptual artificial intelligence aiming to develop physical-mathematical co-creative artificial agents which can enhance considerably the formal abstract features of mathematicians and physicists. So, in this paper, we explore some fundamental (potential) conceptual applications that AMI can have regarding the (under construction) Deep Underground Neutrino Experiment (DUNE), studying the properties and phenomenology of neutrinos. Specifically, we show how seminal pillars of AMI can enable us to produce suitable pseudo-precode of the mathematical foundational concepts modeling neutrinos, and, in that way, going a step forward towards developing an initial UMAA (Universal Mathematical Artificial Agent) specialized in helping us as a co-creative assistant in our quest of understanding more precisely the general features and phenomenology of neutrinos.

Author: GOMEZ-RAMIREZ, Danny A. J.
Co-author: Dr ACERO, Mario A (Universidad del Atlantico)
Presenter: GOMEZ-RAMIREZ, Danny A. J.
Session Classification: Neutrinos