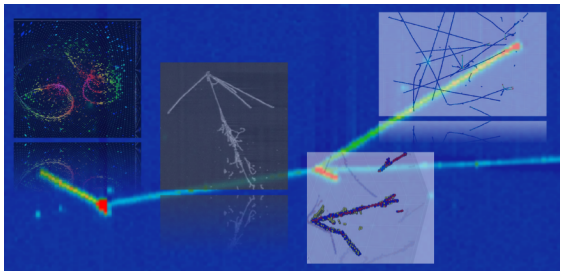

Contribution ID: **19** Type: **Individual Talk**

Pointlike events discrimination in the RED-100 experiment using ML algorithms (remote)

Thursday, August 24, 2023 3:30 PM (25 minutes)

RED-100 is a xenon two phase emission detector designed to study coherent elastic neutrino nucleus scattering (CEvNS). In 2021-22 it was deployed at Kalinin NPP (Udomlya, Russia) 19 meters from the reactor core. More information about CEvNS and the RED-100 experiment is presented in the talk "The RED-100 experiment" (Dmitry Rudik) while this talk is about reducing specific background component. This type of background comes from spontaneous emission of single electron events (SE) at significant rate. Signal from coincidence of several SE can mimic rare CEvNS event. Hence complex discrimination algorithms are required. Spatial distribution of signals in channels in these two cases is different and can be used for selection. We carried out a detailed simulation of the SE signals and developed two algorithms based on neural networks in order to solve this problem. Results of simulation and neural networks are shown and discussed.

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Session Classification: Session 6