



Contribution ID : 59

Type : **Poster**

Machine learning approach in event position reconstruction in DEAP-3600 dark matter search experiment

Tuesday, 29 November 2022 17:10 (120)

In addition to classical analytical data processing methods, machine learning methods are widely used for data analysis in elementary particle physics. Most often such techniques are used to identify a particular class of events (the classification problem) or to predict a certain event parameter (the regression problem). Here we present the result of using a machine learning model to solve the regression problem of event position reconstruction in the DEAP-3600 dark matter search detector. Several machine learning algorithms have been tested on Monte Carlo simulation data and compared with analytical models. The results suggest that this technique can be used in conjunction with the analytical models to improve the quality of the reconstruction.

Primary author(s) : ILYASOV, Aidar (NRNU "MEPhI", NRC "Kurchatov Institute")

Presenter(s) : ILYASOV, Aidar (NRNU "MEPhI", NRC "Kurchatov Institute")

Session Classification : Poster Session

Track Classification : Facilities and advanced detector technologies