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Triplet Siamese Network for Event Unraveling in the SPD Experiment

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The very high data acquisition rate as 20 GB/sec data flow resulting from a 3 MHz collision frequency is planned in the future SPD NICA experiment. It implies that tracks of several events will be overlapped and recorded in a single time-slice. Thus, after the step of recognizing all tracks in a time-slice, it is necessary to group the recognized tracks by events to determine their vertices. In this paper, a deep Siamese neural network with triplet loss function is proposed for this purpose. We present preliminary results of evaluation of the efficiency and speed metrics of the neural network after training on a dataset of simulated SPD data.

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