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TOPSiDE Simulation and Physics Analysis

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TOPSiDE is a concept of a general purpose detector for the Electron-Ion Collider. It features advanced technologies, such as imaging calorimetry with ultra-fast silicon detectors. The detector is conceived such that each particle can be identified and measured individually, similar to the output of Monte Carlo simulations at the hadron level.

We will review the status of the concept, its GEANT4 implementation, and event reconstruction. The latter includes an attempt at using Machine Learning technologies for track finding and to implement Particle Flow Algorithms. The analysis of fully simulated and reconstructed exclusive J/ψ and Upsilon events will be presented.

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