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A Highly Granular Calorimeter System for the DUNE Near Detector LORENZ EMBERGER, Max-Planck-Institute for Physics, DUNE COLLABORATION — The DUNE experiment requires a highly capable near detector system to achieve its ambitious physics goals. One of the subsystems of the near detector is the ND-GAr detector, which will consist of a high pressure gaseous Argon TPC surrounded by an electromagnetic calorimeter, embedded in a magnetic field. The calorimeter complements the tracking capabilities of the TPC with photon and neutron reconstruction to enable a precise reconstruction of the final states of neutrino interactions in the detector volume. The calorimeter will use highly granular active elements consisting of plastic scintillators and SiPMs, as well as scintillator strips with double-sided readout by SiPMs, both of with sub-ns timing capabilities. This enables directional reconstruction of electromagnetic showers crucial for π^0 localization, high neutron sensitivity and energy measurement via time of flight. The fine granularity of the detector, together with possible additional muon detector layers outside of the magnet also provides powerful muon/pion separation essential for a precise characterisation of the neutrino beam. The presentation gives an overview over the evolving design of the DUNE ND-GAr calorimeter and will discuss the expected performance and its relevance for the DUNE physics program.

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