## Contribution submission to the conference SMuK 2023

Generating Accurate Showers in Highly Granular Calorimeters Using Normalizing Flows — •THORSTEN BUSS — Institut für Experimentalphysik, Universität Hamburg, Germany

The full simulation of particle colliders incurs a significant computational cost. Among the most resource-intensive steps are detector simulations. It is expected that future developments, such as higher collider luminosities and highly granular calorimeters, will increase the computational resource requirement for simulation beyond availability. One possible solution is generative neural networks that can accelerate simulations. Normalizing flows are a promising approach in this pursuit. It has been previously demonstrated, that such flows can generate showers in low-complexity calorimeters with high accuracy. We show how normalizing flows can be improved and adapted for precise shower simulation in significantly more complex calorimeter geometries.

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