



Contribution ID: 30

Type: **not specified**

## Invertible Networks or Partons to Detector and Back Again

*Tuesday, July 6, 2021 3:00 PM (20 minutes)*

For simulations where the forward and the inverse directions have a physics meaning, invertible neural networks are especially useful. A conditional INN can invert a detector simulation in terms of high-level observables, specifically for ZW production at the LHC. It allows for a per-event statistical interpretation. Next, we allow for a variable number of QCD jets. We unfold detector effects and QCD radiation to a pre-defined hard process, again with a per-event probabilistic interpretation over parton-level phase space.

### Affiliation

ITP Heidelberg

### Academic Rank

Postdoc

**Primary authors:** BUTTER, Anja; KASIECZKA, Gregor (Hamburg University (DE)); BELLAGENTE, Marco (Universität Heidelberg); WINTERHALDER, Ramon (ITP Heidelberg); PLEHN, Tilman; KÖTHER, Ullrich

**Presenter:** BUTTER, Anja

**Session Classification:** ML-Assisted Measurements and Searches