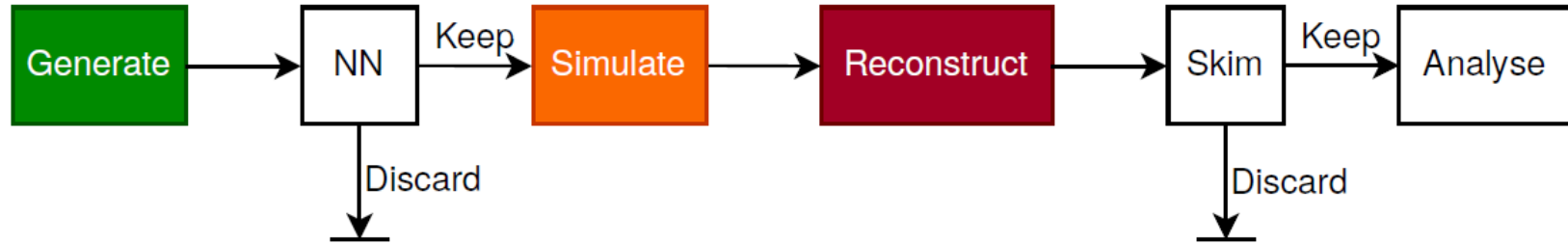


SmartBG

- Need for large simulated datasets scales with amount of measured data
→ huge resource demand, can become limiting factor
- Filtering at generator level established technology for signal MC
- More challenging for background MC
(stronger suppression, no correspondence rec/gen objects)
- Use NN to predict if event is selected for an analysis



- ✓ Concept demonstrated for selected Belle II skims
- Generalization of concept
- Reduction/treatment of bias due to wrong negatives

BG-GAN

- Realistic detector simulation has to take into account effects from background processes
 - can be (much) more resource demanding than signal part
- Use GAN instead of huge samples of Geant4 simulation or recorded data
- ✓ Concept demonstrated for Belle II PXD
 - Generalization of concept (Belle II ECL, pile up at ATLAS?)
 - Conditional GAN for temporal or spatial variations
 - Assessment of quality: agreement with G4 simulation/data, variability

