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## **【353】 Pileup for physics: building a novel hadronic physics dataset**

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Pileup, or the presence of multiple independent proton-proton collisions within the same bunch-crossing, is critical to the production of enormous datasets at the LHC. However, the typical LHC physics analysis only considers a single collision in each bunch crossing; the pileup collisions are viewed as an annoyance to be rejected. By reconstructing these pileup collisions, it is possible to access an enormous dataset of hadronic physics processes.

In this contribution, we motivate this new approach, and describe the procedure used to reconstruct pileup collisions. We then use data recorded by the ATLAS Detector during Run 2 of the LHC to demonstrate the validity of this approach to traditional datasets.

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