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Measurements and rejection strategies for non-collision backgrounds at the ATLAS experiment.

During nominal LHC collisions, protons can interact with residual gas in the beam pipe or with upstream collimators, producing showers of background particles known as Beam-Induced Backgrounds (BIB). These particles do not originate from the actual proton-proton interaction point. BIB can significantly impact detector performance and mimic signals in searches for missing energy or for certain types of new physics, such as neutral long-lived particles. The ATLAS Non-Collision Background group plays a key role in developing tools to identify and reject these backgrounds.
This talk will provide an overview of the ATLAS BIB online monitoring system, the new monitoring triggers introduced for Run 3, and recent results based on measurements from LHC Run 2 data.

Secondary track

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