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Single Event Upsets in the ATLAS IBL Frontend ASICs

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During operation at instantaneous luminosities of up to $2 \cdot 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$ the frontend chips of the ATLAS innermost pixel layer (IBL) experienced single event upsets affecting its global registers as well as the settings for the individual pixels, causing, amongst other things loss of occupancy, noisy pixels, and silent pixels. A quantitative analysis of the single event upsets as well as the operational issues and mitigation techniques will be presented.

Primary authors: TRONCON, Clara; ATLAS, Collaboration; TAKUBO, Yosuke (High Energy Accelerator Research Organization (JP))

Presenter: TAKUBO, Yosuke (High Energy Accelerator Research Organization (JP))

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