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# Investigation of beam halo at the Accelerator Test Facility of KEK (Japan)

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Beam halo in e+e- colliders can induce significant beam loss and serious backgrounds for the experimentation, thereby significantly limiting performances. Understanding the formation mechanisms and behavior of halo particles and how to suppress them requires both modeling and measuring the tails of the beam distribution near the Interaction Point (IP). Here, we present modeling and experimental studies of beam halo performed at the Accelerator Test Facility (ATF) in Japan, as well as performance optimization of an “in vacuum” diamond sensor scanner installed after the IP to measure horizontal and vertical beam core and halo distributions.

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