

SIS100 beam loss mechanisms and corresponding machine protection

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SIS100 is the main accelerator of the FAIR-facility that will provide high-energy high-intensity ions and protons further down to the experiments and production targets. One of the challenges of its operation is the large beam size compared to the physical aperture. This presentation will cover the different beam loss mechanisms in SIS100: resonance crossing due to magnet field errors and space charge, extraction and ionization losses. The corresponding machine protection measures will be discussed, like dedicated warm quadrupoles at extraction section, the halo collimation system and internal beam dump.

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