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Transverse HI ring beam-instabilities + mitigations I

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Several applications of circular hadron accelerators require intense beams, yet the interaction of the charged particles with their surroundings leads to a variety of self-destructing mechanisms, so-called beam instabilities, severly limitating to the performance of the machines. In this lecture, we focus on issues arising in the transverse. We will review the most common instability mechanisms, the existing models as well as current strategies to stabilize them through Landau damping with active feedback systems.

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