

# Octupole for Landau Damping

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Dedicated octupole magnets should be employed in the FCC as a cure against transverse collective instabilities, in addition to the transverse feedback system. In the LHC, the Landau octupoles are routinely combined with the chromaticity and the transverse feedback system in order to ensure the bunch stability through the cycle. We estimate the stability provided by an octupole scheme in FCC using the stability diagrams for the resulting two-dimensional betatron frequency spread. Using the estimations for the impedance-driven tune shifts, and comparisons with the LHC experience, we try to provide suggestions for the adequate octupole scheme in the FCC.

**Primary author:** KORNILOV, Vladimir (GSI Helmholtzzentrum Darmstadt, Germany)

**Co-authors:** BOINE-FRANKENHEIM, Oliver (TU Darmstadt); BUFFAT, Xavier (CERN); NIEDERMAYER, uwe (TU-Darmstadt)

**Presenter:** KORNILOV, Vladimir (GSI Helmholtzzentrum Darmstadt, Germany)

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