

# **TRANSVERSE INSTABILITIES**

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## *Abstract*

The observations of coherent instabilities in all operational phase of the LHC during run II are summarised, describing their impact on the performance. The evolution of the mitigation strategies and of the beam instability models since the start up of the LHC are described and serve as a basis for the development of a strategy for run III. An emphasis will be put on the new diagnostics and tools implemented for the understanding of the instability mechanisms that affected the operation, as well as future needs.