

# Numerical simulation of the beam dynamics in storage rings with electron cooling

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BETACOOOL program developed by JINR electron cooling group is a kit of algorithms based on common format of input and output files. The program is oriented to simulation of the ion beam dynamics in a storage ring in presence of cooling and heating effects. The version presented in this report includes three basic algorithms: simulation of r.m.s. parameters of the ion distribution function evolution in time, simulation of the distribution function evolution using Monte-Carlo method and tracking algorithm based on molecular dynamics technique. General processes to be investigated with the program are intrabeam scattering in the ion beam, electron cooling, interaction with residual gas and internal target.

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