

CAS course on "Introduction to Accelerator Physics", 25 September - 08 October 2023, Santa Susanna, Spain



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Electron Beam Dynamics I

Sunday, October 1, 2023 8:30 AM (1 hour)

Beam dynamics of charged particles in the presence of synchrotron radiation is the subject of these lectures. The basic physics of synchrotron radiation emission and its influence on the beam dynamics in the storage rings shape the equilibrium properties of stored beams. The balance between the radiation damping and quantum fluctuations due to the emission of light determines the design of electron storage rings based colliders and synchrotron light sources. These effects also play significant role in the design of future high energy muon and hadron colliders.

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