



The CERN Accelerator School

Contribution ID: 131

Type: **not specified**

Kinematics of Particle Beams - Relativity

Tuesday 20 September 2022 08:30 (1 hour)

This is an introductory lecture on special relativity which doesn't require much mathematical background. The theory of special relativity, originally proposed by Albert Einstein in his famous 1905 paper, has had profound consequences on our view of physics, space, and time. The goal of this lecture is to introduce the basic concepts of special relativity without overloading it with formulas. The lecture addresses Galilean and Lorentz transformations, emphasizing the conceptual incompatibility of classical kinematics and electrodynamics. The lecture also briefly introduces some famous phenomena behind special relativity including length contraction, time dilation, relativistic kinematics, practical application of the theory and more.

Presenter: SHREYBER, Irina