
Contribution ID: **6** Type: **not specified**

# Intro to Optics Design

*Monday 11 November 2024 15:30 (1 hour)*

This lecture provides an overview of the principles and methodologies involved in linear optics design. It aims to introduce key concepts such as the matrix formalism for linear optics, the use of symplectic matrices in particle evolution, the Courant-Snyder invariant. It also covers the concept of beam emittance and matching conditions for ensemble of particles. The material delves into using xsuite, a general-purpose tracking code, for simulating beam dynamics and optimizing lattice design for large-scale projects like the LHC. The goal is to equip readers with the foundational tools needed for both theoretical understanding and practical application in linear optics and accelerator design.

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