

# ACCELERATOR SEMINAR

**Andrea Latina**  
(CERN)

**Thursday, October 19<sup>th</sup>, 2023 at 4 pm**

**Online-Seminar via Zoom**  
**Zoom: (ID: 623 3741/ PW: 561384)**

## **The tracking code RF-Track and its application**

### Description

RF-Track is a CERN-developed particle tracking code that can simulate the generation, acceleration, and tracking of beams of any species through an entire accelerator, both in realistic field maps and conventional elements. RF-Track includes a large set of single-particle and collective effects: space-charge, beam-beam, beam loading in standing and travelling wave structures, short- and long-range wakefield effects, synchrotron radiation emission, multiple Coulomb scattering in materials, and particle lifetime. These effects make it the ideal tool for the simulation of high-intensity machines. RF-Track has been used for the simulation of electron linacs for medical applications, inverse-Compton-scattering sources, positron sources, protons in Linac4, and the cooling channel of a future muon collider. An overview of the code is presented, along with some significant results.



Coordinator: Claude Krantz, Janet Schmidt  
Secretary: Heidi Martinez



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