

# Laser wakefield accelerator design

01

## DESIGN OF ACCELERATORS

Setting component parameters

02

## LASER-PLASMA SIMULATION

Multi-parameters (laser + plasma profiles)  
Cross-checking

03

## TRANSFER LINE DESIGN

Development of the TraceWin code

06

## OPTIMISATION OF ACCELERATORS

Numerical optimisation (Machine learning)

## EARLI project

### 1. Design of a laser wakefield accelerator for electron injection

- Transition toward user facilities
- First step: numerical design, prototypes and viability studies

### 2. For the AWAKE collaboration

- As an alternative design for AWAKE
- Comparison with a CERN electron gun will be made

