Contribution ID: **14** Type: **Poster**

Design and Optimization Study of the linac for Fourth generation storage ring Using MOGA

Thursday, November 14, 2024 1:00 PM (1h 30m)

In the development of the linac for fourth generation storage ring, we conducted a comprehensive beam dynamics simulation to optimize the design of the injector system. To achieve this, we employed the Multi-Objective Genetic Algorithm (MOGA) to improve the linac operation parameters. The primary objectives of this optimization study were to minimize energy spread and transverse emittance at the end of the linac. We also considered design constraints related to beam size, bunch length, transmission rate, and average energy. We could design the linac
requirement for beam parameters at the end of linac. We performed an error study to assess whether the design selected through MOGA was operationally acceptable. This research aims to enhance the efficiency and performance of the linac for the fourth generation storage ring, contributing to its successful operation in the field of synchrotron radiation science.

Paper submission Plan

No

Best Presentation

No

Contribution track

ICABU WG2. Beam Physics, Diagnostics & Novel Techniques

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