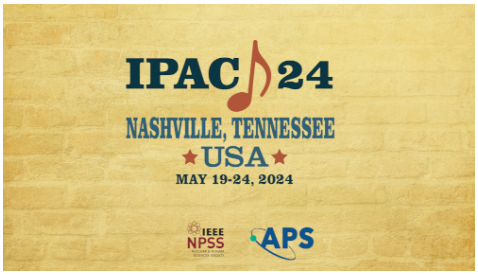

Contribution ID: **541** Contribution code: **WEPR66** Type: **Poster Presentation**

A parallel variable population multi-objective optimization software package for accelerator design optimization

Wednesday, 22 May 2024 16:00 (2 hours)

The simultaneous optimization of multiple objective functions is needed in many particle accelerator applications. In this paper, we report on the development of an open source parallel evolution based multi-objective optimization package that uses a variable population from generation to generation and an external storage to save good solutions. Two heuristic optimization methods, one uses the unified differential evolution and the other uses the real-coded genetic algorithm, are included in the optimizer to generate next generation candidate solutions. We will present the usage of the package, tests, and application examples.

Footnotes

Funding Agency

Paper preparation format

Region represented

North America

Primary author: QIANG, Ji (Lawrence Berkeley National Laboratory)

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Session Classification: Wednesday Poster Session

Track Classification: MC5: Beam Dynamics and EM Fields: MC5.D11 Code Developments and Simulation Techniques