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## Global Optimisation

*Tuesday, June 11, 2024 4:14 PM (22 minutes)*

The talk provides the latest advancements in evaluating optimal powering solutions for the FCC-ee.

To achieve a global optimum which balances Capital and Operation Expenditures (CAPEX and OPEX) a holistic approach is needed. Several equipment designs such as cables, power converters, cooling and ventilation systems, magnet, and alcores volumes are tightly related and CAPEX+OPEX compromises must be evaluated. For this purpose, a global optimization tool has been developed, integrating models from different expert groups at CERN. This tool enables the identification of optimal design trade-offs between accelerator subsystems by minimizing total expenditure.

The global optimization tool is utilized to illustrate the overall impact of selecting different number of alcores. It provides the optimal number of alcores based on the precision of current models.

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