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Beamline Final Foci Optimisations for High Intensity Muon Beams at PSI

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The High Intensity Muon Beams (HIMB) project at the Paul Scherrer Institute (PSI) will provide an unprecedented rate of 1e10 muons/sec to next-generation intensity frontier particle physics and material science experiments. As part of our work on the beamline design optimisation for the HIMB, we used differential-algebraic transfer maps with system knobs computed using the code *COSY INFINITY* to minimise the beam spot sizes at the final foci. Levenberg-Marquardt and simulated annealing optimisers were used in the final foci optimisations.

Primary author: Dr VALETOV, Eremey (PSI - Paul Scherrer Institut)

Co-author: HIMB PROJECT, for the

Presenter: Dr VALETOV, Eremey (PSI - Paul Scherrer Institut)

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