

DETAILED ELECTRON-CLOUD MODELING WITH CMAD

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Abstract

CMAD is a new code modeling the electron cloud effect driven instability by applying an electron-beam interaction at every element of a beam line, reading a MAD description of the accelerator optics as input. CMAD is parallelized and optimized for speed. It is especially suited for the modeling of incoherent electron-cloud effects for which the spatial distribution of electrons is particularly important. This talk will review the physics, describe the design concept, the present status, benchmarking exercises, and example applications.

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