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Study and Simulation of Cryogenic Photonic-Band-Gap Disk-loaded Structure

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In order to further improve the accelerating gradient of accelerators, the cryogenic acceleration structure is studied. Based on material characteristics and technical conditions, the basic design is completed. Photonic band-gap (PBG) structures use a lattice of rods to prevent propagation of RF field through the lattice at certain frequencies while the higher order modes are damped. The design of the single-cell PBG structure has been modified, which changes the shape of the rods surrounding the defect region to reduce the peak surface magnetic field in the structure.

Footnotes

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Primary authors: WANG, Cheng (Shanghai Synchrotron Radiation Facility); GAO, Zihe (Shanghai Institute of Applied Physics)

Co-authors: SU, Dinghui (Shanghai Institute of Applied Physics); TIAN, Jia Hao (ShanghaiTech University); TAN, Jianhao (Shanghai Advanced Research Institute); XU, Junjie (Shanghai Institute of Applied Physics); WANG, ShuHua (Shanghai Institute of Applied Physics); FANG, Wencheng (Shanghai Synchrotron Radiation Facility); HUANG, Xiaoxia (Shanghai Synchrotron Radiation Facility); LU, Yixing (Shanghai Synchrotron Radiation Facility); GUO, Yusen (ShanghaiTech University)

Presenter: SU, Dinghui (Shanghai Institute of Applied Physics)

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