

FCC electrical power requirements –Methodology for data collection and geographical mapping

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The design of the electrical network for the supply of the Future Linear Collider (FCC), a 100 km long circular accelerator under feasibility evaluation, relies on the identification, classification and geographical location of the electrical power requirements. This paper presents a methodology for the data collection and geographical mapping of the power requirements. First, the systems of the accelerator requiring electrical power are identified. Then, for each system a classification of the power requirements is done by considering the system consumption during each phase of the accelerator operational cycle. Finally, the locations where the electrical power shall be delivered to each individual system are identified and mapped. The methodology will allow to compare the proposed versions of the individual systems power requirements and to quantify average and peak power requirements of all studied accelerator configurations.

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