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## **Cryogenic Design for C3 Main Linacs**

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C3 operates under Liquid Nitrogen (LN) at a temperature of ~80 K to improve the electrical conductivity of Cu by a factor of ~3, resulting in an accelerator structure shunt impedance of ~300M $\Omega$ /m. Since the accelerator structures are normal conducting, they dissipate ~2500 watts each. The structures are cooled by nucleate boiling, and the resulting cold saturated Nitrogen vapor is re-liquified, requiring MW scale refrigerators. The linac organization into CryoModules, Sectors, and SuperSectors will be described, along with the basic cryogenic concepts and challenges.

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