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SRF above 1.3 GHz: Motivation and Implications for Higher Order Modes

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Recent research into impurity-doped niobium and Nb3Sn have pushed towards unprecedentedly high quality factors and low cryogenic power consumption for SRF accelerators. These open the way to high frequency cavities (above the 1.3 GHz standard in contemporary SRF projects such as EXFEL and LCLS-II) which could significantly decrease costs for new accelerator facilities. In this talk we provide some background on these novel surface treatments, give motivation for the move to higher frequency, and raise some points of discussion for the impacts on higher order mode consideration.

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