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Niobium Thin Film Technology for Superconducting RF Cavities

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Synchrotron radiation losses are one of the main limitations for circular e+e- accelerators and require hence a large radio-frequency (RF) power system. For continuous wave (cw) operation the use of superconducting RF cavities comes with significant savings in power consumption despite the costs of cryogenics. Furthermore, the niobium thin film technology which has been developed at CERN and is pursued at different laboratories around the world today has several advantages over the standard bulk niobium technology and further reduces installation as well as operation costs.
This talk gives an overview over the niobium thin film technology for superconducting RF cavities, its advantages, limitations and possible application for future cw e+e- machines.

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