Introduction to coherence peak in superconducting cavities

A. Miyazaki

How to accelerate charged particles



Kinetic energy of a charge +e (1.6 \times 10⁻¹⁹C) accelerated by 1 V E = 1 eV

Modern science >> MeV (Neutrons>1GeV, hard X-rays>10GeV, Higgs boson>125+90 GeV)

Confine electromagnetic waves inside RF resonant cavities Charged particles synchronized with RF can be accelerated









- 1.20196E+9-1.20196E+9-1.20195E+9-1.20195E+9-1.20195E+9-1.20195E+9-1.20195E+9-1.20195E+9-1.20195E+9-1.20194E+9-1.20194E+9-0 100 200 300 400 500 600 700 800 900 1000 1100 1200 Time
- A strange overshoot was observed in some Nbfilm cavities at CERN
- No similar phenomena in standard clean bulk niobium such as ESS cavities was observed

Doping in bulk niobium

https://srf2019.vrws.de/talks/tufua4_talk.pdf New Insights on Nitrogen Doping

Daniel Bafia

19th International Conference on RF Superconductivity 02 July 2019

F vs T shows some anomaly just below T_c

arXiv:2103.10601



Doping in bulk niobium

https://srf2019.vrws.de/talks/tufua4_talk.pdf

