**High Q0 working group**

Unstructured set of collected questions, topics for discussion:

* How precisely can we measure R0(Bpk)?
* How does R0(Bpk) change as a function of N concentration within penetration depth?
* How can we distinguish whether Rs(Bpk) drop is an “added” material effect or the absence of a “typical” loss mechanism?
* What do we know about N distribution in Nb ?
  + ~100 ppm is “beneficial”
  + Not a grain boundary effect
  + FG/ingot Nb same
* How is Bpk quench envelope related to surface N concentration?
* How is N surface concentration (after EP) dependent on high temperature exposure?
  + What data exists?
* Data showing the flux expulsion dependence on dT/dx through Tc?
  + Orientation dependence: coaxial vs transverse fields?
* What clarity is there on practical implications for “best” cavity cooling in cryomodules?
  + Low velocity, “high” volumetric flow of coldest available He supply possible with temperature-dependent GHe density, providing well-defined vertical thermal gradient when cooling cavity below 30 K?
* Gleaning all that we have learned regarding magnetic hygiene and cooldown conditions, what is the best we can do with R0(Bpk) without doping?
* How do gap tunneling measurements depend on surface concentration of N?
* Any data linking Rs(Bpk) behavior to Nb films yet?

**References** *Please help build a common set - note additions needed*

[[1-13](#_ENREF_1), [17-22](#_ENREF_17)]

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