Section 3 and 4 outline embellishment… view from ML

3. Helical Cooling Channel Design and Simulation (ML+KY)

Overview paragraph (ML and KY)

3.1 Helical Cooling Channel Simulations (KY) **See Katsuya's presentation**
Report on efforts to optimize HCC parameters. Specifically report on how to include RF. This section is to inform decision to build the HCC prototype. Report on parameter choices for tapered field magnet for 6D cooling experiment (perhaps this should be a separate section).

3.2 Helical Magnet Design for MANX experiment
Report on design efforts on HCC design. Specifically slinky vs snake design. Pros and cons Decision to pursue "slinky" Report progress on designing matching sections. Unresolved design issues: e.g. Need for corrector coils for HCC, Comment on impact on beam line choice, instrumentation interface , infrastructure requirements for magnet for real experiment.
KY, Vl Kashikhin , ML, AJ
Much of this work has been summarized in conference proceedings.

3.3 HCC Demonstration Magnet
Report on plans for the three (four) coils tests. Specifically, what will we learn from it?
This work is nicely summarized in a PAC 07 paper for Vl. Kashikhin

3.4 FY08 Plan
ML and KY will summarize program which includes
-schedule for design, manufacture and test of demonstration magnet (probably will spill into fy09)
-continue design issues for full scale Manx magnet
-continued simulation studies
-HCC development beyond MANX
-discuss organization of local HCC magnet effort , meeting structure etc.

4. HTS Solenoid Studies (AT+ML)

Overview paragraph (AT + ML)

4.1 Building a National Collaboration
Report on plans to build a National Collaboration on HTS material.

4.2 Conductor Studies (Emanuela Barzi, AZ and ML)
Summarize conductor studies performed at Fermilab in last 12 months. Report on studies performed elsewhere that are relevant to HTS solenoids for e.g. reported at Bi 2212 day as well as private communications and literature searches.

Summarized here will be a list of important conductor parameters that needs to be characterized for magnet design.

4.2 A HTS solenoid magnet design (V. Kashikhin, A. Zlobin, ML, others in SC group)

This year, there were paper studies performed by Kahn/Palmer and by Kashihkin/Zlobin This will be summarized here.

4.3 FY08 Plan (ML with contribtutions from many…)
I list here tasks that should be performed in FY08. (somewhat ambitious list but probably not complete)

Develop probes required to characterize conductor under tensile stress depending on literature "gap" in knowledge

Work with CDP or "white paper group" to organize conductor information, conductor acquisition.

Order HTS material

Convert small oven for HTS reaction. Plan modest program to react strands compare results to stands reacted in industry. Start program to characterize temperature/time cycles

Using HTS strand, make cable, make small race track. Test in VMTF

Collaborate with magnet designers to make conductor performance requirements for magnets, or alternately, list existing conductor limits and realistic future performance as inputs to magnet designs

Develop and execute a measurement plan for existing tapes and strands

Consider strategic partnerships with other labs for conductor studies

Build small solenoid for testing at Fermilab or NHMFL

Continue to develop designs for high field solenoids, using existing stand/tape parameters

Utilize innovation in stress management