Hi Nobu,

We have been discussing the R&D effort on high gradient performance of the accelerator structures. I have attached three files that summarize some of our present thinking. "High Gradient R&D" is a kind of overview, "HG_Structures" is the logical plan for tests of structure design, and "HG_Manufacturing" is the logical plan for tests of manufacturing processes. We need to have your ideas and input to these lists, and to coordinate our work. This will be a major topic for ISG6, but as you indicated, we need to move faster on making some decisions about the sequence of structures we are building.

We suggest the possibility of altering the planned manufacturing of the "FLAT" TxxVGYyP structures at IHI. The goal is to create a more forward looking plan. This is summarized in the attached file "HG_Structures" that Juwen has put together with discussions from the group here, and is shown below in summary form. In this plan we would complete fabrication and tests on only four of the "T" series diamond-turned structures. The T20VG5N and T105VG5N test the dependence of the structure properties on length, and the T53VG3F and T53VG5F test the dependence on group velocity. We already of good indication from the DS2S now under test that a combination of lower group velocity and shorter structures performs better. We are nearing completion of design of two structures that carry this direction to natural limits: 2. A travelling wave design H91VG5N, and 3. A standing wave design S20PIN. Juwen will be able to provide you with more details of the cell properties. The suggestion is that we build these two structures instead of the remaining "TxxVGyyp" series. We know this means that the rough machining you have already done must be redone, but it corresponds to manufacture of approximately the same number of cells and approximately the same amount of work bonding these together at IHI.

1. T20VG5N and T105VG5N (by middle of December 2000). T53VG3F and T53VG5F as next highest priorities.
2. High Phase Advance Structure: H91VG5N
Disc-loaded waveguide TW structure: L=91 cm, 83 cells,
Phase advance of 150°/cell,
Vg 5% - 1%,
Delta f1=10%, 4sigma
3. SW Structure: S20PIN
Disc-loaded waveguide SW structure: L=20 cm, 15 cells,
pi mode structure,
2a=10.5 mm, t=2.5 mm

Please discuss this with people there. I will be at the Physics/Detectors meeting at Fermilab later this week, but Juwen and Chris will be able to go over these ideas with you at the Thursday/Friday video meeting. I will certainly read email from Fermilab.

I think all the travel arrangements for ISG6 are in good shape. We added one more person since Perry Wilson will come to the meeting. We should probably think some about the details of the goals for the meeting.

More later,
Dave