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Memo

DATE: *March 10, 2002*

TO: RHIC E-Coolers

FROM: *Ady Hershcovitch*

SUBJECT: **Minutes of the March 8, 2002 Meeting**

Present: Ilan Ben-Zvi, Michael Harrison, Ady Hershcovitch, Michael Iarocci, Jorg Kewisch, William MacKay, Stephen Peggs, Thomas Roser, Triveni Srinivasan-Rao, Dejan Trbojevic, Dong Wang, Vitaly Yakimenko.

Reminder: a special electron cooling meeting and a seminar that are of great interest to us will be held next Friday, March 15, 2002 in the 911B Large Conference Room. At 10:00 AM there will be a presentation by staff members from Advanced Energy Systems on the SBIR CW Photocathode Electron Gun project. At 4:00 PM, Dr. David Bruhwiler from Tech-X Corporation, in Boulder Colorado, will give a seminar titled "A First Attempt to Simulate Electron Cooling Physics through Direct Coulomb Interactions." It's about the work at Tech-X to develop a parallel 3-D simulation code that can model electron-cooling physics through direct Coulomb interactions. Abstract of this talk can be found in Ilan's 2/20/02 e-mail.

Topics discussed: 939 Setup, Simulation & Calculations.

939 Setup: Mike Iarocci gave a short update on progress made on the estimate schedule that he presented during the March 1, 2002 meeting. Schedule item # 9 - process diagram and instrumentation – is being worked on in the electrical design room. Design request was submitted for mechanical design of item # 28, which is basically the area layout. A meeting is schedule for Wednesday March 13th to discuss the 902 recovery system upgrade (items # 23- 26). Ilan reported that Joe Scaduto is the project engineer for the 939 setup.

Simulation & Calculations: Jorg showed a couple of configurations with 4 KG electromagnets, one of which would fit in the tunnel. It's a good beginning for a process that needs some more iterations.

Vitaly asked about average beam and beam breakup threshold in the RF cavities. Replies from Ilan and Dong were 50 mA to the former and 65 mA to the later. To Mike Harrison's question regarding the difference between Tech-X and Dubna codes, Ilan replied that the Dubna code is based on semi-empirical formulas for calculating cooling, while the Tech-X code will produce numerical calculation using direct Coulomb interactions between the ensemble of ions and electrons, thus has the promise of providing a good physics model.