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Prof. Maury Tigner  
Director  
Cornell Laboratory for Accelerator Sciences and Education  
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Dear Maury,

As you know, Argonne has played a lead role in electron cloud diagnostics and experimental characterization through detailed studies at the Advanced Photon Source. This effort was lead by Katherine Harkay and Richard Rosenberg. In addition, they have collaborated with or consulted for a number of other labs in implementing electron cloud diagnostics and carrying out experimental studies: IHEP BEP-C, LANL PSR, and FNAL Tevatron and Booster. The Retarding Field Analyzer (RFA) designed by Richard has become the standard electron cloud diagnostic used worldwide. Kathy has given numerous review talks on electron clouds at PAC and EPAC and at international workshops.

Kathy is interested in collaborating on the CESR Test Accelerator in the area of electron cloud studies. Given the indirect evidence of electron clouds in the CESR collider, she proposed that RFAs be installed in the CESR ring this year to characterize the electron cloud through a series of dedicated experiments. She recently provided Cornell with drawings of the APS RFA, and Richard provided a partially-assembled RFA, so that Cornell can proceed with their design and fabrication for CESR. Kathy and Richard are providing guidance to Mark Palmer and Yulin Li to ensure that the RFAs are successfully bench-tested and properly installed. Kathy also provided Cornell with schematics of an amplifier that will allow time-resolved electron cloud measurements.

After the RFAs are installed in the CESR ring, Kathy plans on participating in electron cloud studies (subject to her schedule and other commitments) and assisting in analyzing the data. Based on these results, she will collaborate in developing the electron cloud diagnostics and beam instrumentation for the CESR-c wigglers that are to be installed as a model for the ILC damping ring baseline design. Kathy is interested in continuing to participate in electron cloud studies after the 20-m section is installed containing the wigglers, drifts, quads, and bends. She will assist in analyzing the data, characterizing the electron cloud distribution, and studying techniques to mitigate the electron cloud.

A rough estimate of Argonne's effort would be about 0.1 FTE.

Best regards,

A handwritten signature in dark ink, appearing to read "E. Gluskin". The signature is fluid and cursive, written over a light-colored background.

Dr. Efim Gluskin  
Division Director/ASD