Fall 1993 dedicated undulator run

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CHESS is now accepting proposals for its third hard x-ray undulator run of one month duration, due to take place somewhere between September and November, 1993. During this run, CESR is reconfigured to optimize the performance of the undulator. Since the CHESS undulator is the sole user of CESR during this time, the NSF provides additional funding ($0.5M per month) to cover the operating expenses.

Below is a list of publications that resulted from the successful running of the 3.3 cm period, 123 pole undulator in 1988 and 1991 by a joint team of scientists from Cornell University and Argonne National Laboratory. This insertion device produces x-rays with energy tunable from 4.7 to 8 keV in first order and 14.1 to 24 keV in third order. We anticipate operation at 5.43 GeV, 80 to 100 milliampere currents with 6 bunches of electrons or 35 milliamperes in a single bunch timing mode.

Proposals for experiments (including machine physics, x-ray optics, and x-ray science) should be submitted to CHESS in the form of a two-to-four page description of the desired experiment and its significance to synchrotron radiation research by Monday, April 19, 1993. Proposals will be reviewed by a review committee. In the 1988 running period, successful experiments included: heat loading tests of monochromator optics4-5, x-ray standing wave study on a membrane-aqueous interface, x-ray fluorescence microprobe study of minerals7, measurement of emittance from the undulator radiation itself9, 120 picosecond Laue diffraction8-10, and a beam position monitor study11. The 1991 run included a successful test of an inclined monochromator12-13, beam position monitor14, cryogenic cooling of monochromator crystals, time-resolved Laue crystallography, nuclear Bragg scattering, intensity fluctuation spectroscopy, and an x-ray microprobe experiment15.

For further information about the upcoming undulator run, please contact Don Bilderback or Bob Batterman.