A NEW HIGH ENERGY X-RAY STATION AT THE CORNELL HIGH ENERGY SYNCHROTRON SOURCE

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The CHESS A2 endstation has hosted high-energy X-ray applications for over 30 years, currently at about a 50\% duty cycle of available X-ray beam time. CHESS is designing an upgrade for the F2 endstation to add additional support for high-energy studies on a full-time basis. This talk will outline the upgrade and describe new F2 capabilities. A collaboration with the Air Force Research Laboratory is enabling the upgrade in concert with the Energy Materials Center at Cornell (emc2). The 24-pole permanent magnet wiggler and new optics at F2 will provide routine access to photons up to 70 or 75 keV. The new F2 facility will employ Laue focusing optics, a new large-area detector and updated station control and computer storage infrastructure. A new end station diffractometer with an in-situ rotation/loading/heating stage for structural materials is included in the upgrade. A project goal is to have similar equipment at CHESS and at APS so that structural materials experimenters can move between the two labs seamlessly. The new beam line is scheduled to come online in Fall, 2013.