

11C Protein micro-crystallography beamline of the Pohang Accelerator Laboratory

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11C micro-focused beamline is a new structural biology beamline under construction at the Pohang Accelerator Laboratory (PAL), South Korea. The aimed beam size is 5 to 20 μm , derived from the In-vacuum undulator (Period, 20 mm; Length, 1.4 m), allowing for $\sim 10 \mu\text{m}$ protein crystallographic experiments such as data collection from micro-crystals to structural determination using the 1×10^{12} photons/sec X-rays. The main optical components of 11C are the Channel cut monochromator (CCM) and Kirkpatrick-Baez (KB) mirror system. Out of issues in the micro-beamline, the mirror alignment and the robust beam stability during the data collection are very important. The beam fluctuation caused by inconstant temperature could be the main problem. In this seminar, I will present the development of the 11C beamline to overcome the micro-beam instability due to changing temperature and improve the mirror alignment for fine focusing. Finally, the beam instability reduction techniques of Photon Factory BL-17A and -1A will be discussed to exploit at 11C beamline.

11C Beamline optical layout

