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A NEW PHOTOEMISSION BRANCH LINE AT SSRL BEAM LINE 5

A high resolution and high flux undulator branch line is being constructed at SSRL beam line 5 for both angle-resolved and spin-resolved photoemission spectroscopy. This new branch line will cover the photon energy range of 20-200 eV, complementary to the existing normal-incidence-monochromator (NIM) branch line (7-35 eV) on the same straight section. An APPLE-II type elliptically polarizing undulator will cover the energy range of both branch lines with full polarization control. The optical design of the new branch line is based on a plane grating monochromator (PGM) of SX-700 mechanism with three varied-line-spacing (VLS) gratings, offering both high resolution and high flux operation modes. In this talk, I will present the optical design and expected performance of this new branch line.