SOLEIL orbit feedback systems and photon BPMs

A global orbit correction system based on two feedback loops, slow and fast, stabilizes the photon beam to the submicron level at the SOLEIL light source. Having two systems, each one using a different set of correctors is advantageous for performance and cost. The recent addition of dipole frontend XBPMs into the fast loop improves the stability of the bending magnet beamlines. A similar approach is planned for improving the stability of the in-vacuum undulator beamlines. An X-BPM just in front of the first BL critical element seems the most promising if it is sufficiently insensitivity to the gap aperture. It is not the case of all our Blade X-BPMs. The issue of the X-BPM readings sensitivity to the gap size is even more critical for the Apple II undulators because the blade X-BPM cannot work for all gap and phase configurations. There is a strong need for XBPMs insensitive to undulator configuration changes.

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