MS44-2-8 The BM07-FIP2 beamline for macromolecular crystallography at ESRF
#MS44-2-8

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Abstract
BM07-FIP2 is available to users since October 1st, 2021. It is the follow-up of beamline FIP-BM30A [1] which ended operation in 2018 upon ESRF-EBS upgrade. FIP2 (French beamline for the Investigation of Proteins) is located on the Bending Magnet section 07 (BM07) of the ESRF. It is especially dedicated to crystallography of biological macromolecules. Its optics can deliver a focused beam on a fixed sample position in a large energy range (7-17 keV, to be extended to 5-25 keV). The beam size can be adjusted between 50 x 50 and 250 x 250 um^2. Data collection is controlled using the browser-based MXCuBE3 user interface, and sample (meta)data are handled and stored by ISPyB. FIP offers the following capabilities:
- High-throughput screening of cryocooled crystals
- (Multiwavelength) anomalous diffraction experiments
- In situ (in plate) crystal screening and data collection [2]
- On-line UV-Vis absorption microspectrophotometry [3]
- Humidity-controlled experiments [4]

References
[1] Roth M, Carpentier P, Kaïkati O, Joly J, Charrault P, Pirocchi M, Kahn R, Fanchon E, Jacquamet L, Borel F, Bertoni A, Israel-Gouy P, Ferrer JL (2002) FIP: a highly automated beamline for multiwavelength anomalous diffraction experiments. Acta Cryst. D58, 805-914.

[2] Jacquamet L, Ohana J, Joly J, Borel F, Pirocchi M, Charrault P, Bertoni A, Israel-Gouy P, Carpentier P, Kozielski F, Blot D, Ferrer JL. (2004) Automated analysis of vapour diffusion crystallization drops with an X-ray beam. Structure 12, 1219-1225.

[3] von Stetten D, Giraud T, Carpentier P, Sever F, Terrien M, Dobias F, Juers DH, Flot D, Mueller-Dieckmann C, Leonard GA, de Sanctis D, Royant A (2015) In crystallo optical spectroscopy (icOS) as a complementary tool on the macromolecular crystallography beamlines of the ESRF. Acta Cryst. D71, 15-26

[4] Sanchez-Weatherby J, Bowler MW, Huet J, Gobbo A, Felisaz F, Lavault B, Moya R, Kadlec J, Ravelli RB, Cipriani F (2009) Improving diffraction by humidity control: a novel device compatible with X-ray beamlines . Acta Cryst. D65, 1237-1246