XAFS beamlines for E>2 keV (excluding energy-dispersive setups)

[K.Klementiev state of 13.10.2006]

CM=collimating mirror, FM=focusing mirror, HFM (VFM)=horizontally (vertically) focusing mirror, DCM=double crystal monochromator, ChC=channel-cut, SB=sagittally-bent, KB=Kirkpatrick–Baez, WC=water-cooled
Current in bold = top-up.

Location,	E_e (GeV)	Max I (mA)	Beamline	Source	Crystals, E range (keV)	Flux at sample	Beam size at sample (HxV)	optics	SB 2nd
Europe									
ALBA	3	**400**	XAFS	MPW80, Ec=10.4 keV B=1.74T	Si(111), Si(311) 2.4 – 35 (focused) – 65	10^{13}@9keV $5x10^{11}$@30keV $5x10^{10}$@50keV	0.2×0.1(9–35keV) 8×0.4(30–65keV)	CM (Si,Rh,Pt) DCM LN2-cooled (both) flat, FM (Pt,Rh dual toroid)	
ANKA	2.5	180	ANKA-XAS	BM 1.5 T (E_C = 6 keV)	Si(111), Si(311) 2.4 - 25	$1x10^{10}$ ph/s/cm^2 at 9 keV	20 mm x 2 mm	DCM, Planar Zerodur	
BESSY	1.7	240	DIP 01-1B	BM (E_C = 2.5 keV)	InSb (111) 1.674 - 15 Si (111) 1.997 – 15 Si (311) 3.817 – 15 Si (422) 5.639 – 15	~$1x10^{11}$ ph/s with Si (111) at 9 keV	0.4 x 0.6 mm^2	toro M, DCM	
			DIP-09-2		SiGe 111 graded 4 – 15	$1x10^{10}$ ph/s at 10 keV	250 x 600 μm	DCM 1st WC, cyl. M w. bender, Rh-coated	
Diamond	3	300 (500)	B18 (Core EXAFS)						
			I20 (XAS-3)	5m 1.6T 100-pole permanent field MPW	Si(111) and (311) 4–35 keV	7.5 x 10^{13} ph/s Si(111) at 10keV	1.5 mm x 125 μm	1.5m Pt coated CM + plane M Direct LN_2 cooled twin-axis M, 1.5m Pt coated toroid M+ plane M (+EDE)	
			I18-microfocus	U27 2m (K=2.0)	??? 1.5-20	1 × 10^{14} s^{-1} in 0.1% bw at 10 keV	<1μm ×<1μm	FM, DCM with interchangeable crystals, KB	
Elettra	2.0 –2.4	330	BL 11.1 (XAFS)	BM 1.2T (E_C=3.22 keV)	Si(111), Si(311) 2.3 - 25			Cylindrical prefocusing M, DCM	
ESRF	6	**200**	BM1B (Swiss - Norwegian CRG)		Si (111) 6 – 41		35x3 mm^2 unfocused	M, ChCM WC, M	
			BM8 (GILDA)	BM (E_C = 19.2 keV)	Si (311) and (511) 5 – 85	10^{10} - 10^{11} ph s^{-1}	1 x 2 mm^2	CM, DCM SB 2nd crystal, cylinder M	↻
			BM20 (Rossendorf)		Si (111) and (311) 6 – 33			CM, DCM, FM	
			BM25 (Spline)	BM (E_C = 9.6 keV)	Si (111) and (311) 5 – 45	10^{12}ph/s	0.1 x 0.1 mm^2	CM Rh coated, pseudo ChC DCM 1st WC and 2nd SB, cylinder M	↻
			BM26 (DUBBLE)		Si (111) and (311) 5 – 30			CM Pt coated DCM cylinder M Pt coated	
			BM29		Si(111), (220), (311), (511) (not easily exchangeable) 4.5 – 74			DCM crystals are He-gas cooled No mirrors	
			BM30 (FAME)	BM 0.85T	Si(111) and (220) 4 – 40		280 μm x 150 μm	CM Rh coated, DCM LN_2 cooled 1st and SB 2nd , cylinder M	↻
			ID26		Si(111) and Si(220) 2.4–27	> 10^{13} ph/sec	New K-B mirror system to be commissioned soon	HDM1, water-cooled, Pt, Si and Cr – coatings, Cryo-cooled DCM (Kohzu), bimorph HFM2 and bimorph HVFM3	

HASYLAB DORIS III	4.45	140	A1	BM Ec=16.6	Si(111) or Si(311) 2.4 – 17, 11 – 32	10^9 ph mm^{-2} s^{-1} at 9 keV	Typical 8 x 1 mm^2	ChC (2 and 4 crystal mode), water-cooled mono, No mirrors	
			C	BM Ec=16.6	Si(111) or Si(311) 2.3 – 22, 4.4 – 43.4	10^9 ph mm^{-2} s^{-1} at 9 keV	30 x 10 mm^2	1st crystal indirectly water-cooled Mirrors not yet installed	
			D2 (EMBL)	BM Ec=16.6	Si(111) or Si(220) 5 – 30		5.0 mm x 1.5 mm	toroidal, 4 segments, total length 1800 mm, Au-coated, T-controlled 1st crystal of DCM	
			E4	BM Ec=16.6	Si(111) 2.7 – 12	10^{10} ph/s at 7 keV	6.0 mm x 0.6 mm	toroidal Au-coated, plane (C,Ni,Au-coated), DCM	
			X1	BM Ec=16.6	Si(111), Si(311) and Si(511) 6 – 80	2x10^9 ph mm^{-2} s^{-1} at 9 keV; 7x10^8 ph mm^{-2} s^{-1} at 19 keV	20 x 10 mm^2	DCM, no mirrors	
MAX-LAB MAX-II	1.5	250	I811 (material science)	SMPW65, 3.5T, K=20, P_{tot}=5 kW, E_c = 5 keV	Si(111) and (311) (not easily exchangeable) 2.4 – 20	2x10^{15} ph/s/ 0.1% bw at 10 keV 5x10^{11} ph/s @9keV	Typically 0.5 mm x 1.0 mm (v x h)	Si CM Rh coating , DCM with adaptive water-cooled 1st and SB 2nd, cylinder zerodur	C
SLS	2.4	**300**	SuperXAS						
			LUCIA	Apple II undulator UE54, K=0.8 - 2.5	Beryl, KPT, YB_{66}, InSb (111) Si(111) 0.8 – 8	2x10^{12} ph/s	1 µm x 1 µm	Ni-coated spherical and double-plane mirrors, DCM, KB	
			microXAS	minigap in-vacuum U19	Si(111) and Si(311), 5 – 20	2 x 10^{12} ph/s	1 µm x 1 µm	Toroid Rh-coated, DCM LN_2 cooled 1st, KB	
Soleil	2.75	500	MARS	MPW (K=32) E_c = 15 keV	3.5 – 50				
			XAS	BM	4 – 40				
			BL15	BM	3 – 25				
			SAMBA	BM, E_c = 8.65 keV	Si(111) and (200) 4.6 – 43			CM, DCM1with SB 2nd, DCM2 without focusing, cylinder M	C
SRS	2	250	4.2		Ge(111), InSb(111) or Si(311) 1.8 – 10	3 x 10^{11} ph/s/100mA		Plane M: uncoated, Pt-coated, Cr-coated, cyl bent M, DCM	
			7.1	BM	Si(111) 4 –10.5		2.5x2 mm^2	Plane M,: Pt-coated, DCM: 1st water cooled, 2nd SB	C
			9.2	Wiggler I	Si111, 5.5 – 18	~10^9 ph/s	~50µm	DCM; 1st water-cooled, KB	
			9.3	Wiggler I	Si(111) Si(220) 6 – 30		10 mm (H)	CM Pd-coated, DCM 1st WC,	
			16.5	Supercond. Single-Period 6T Wiggler	7 – 40			CM, DCM SB, FM	C
America									
ALS	1.0 –1.9	400	10.3.2	BM	Si(111) 2.5-17	9 x 10^9 ph/s	16 x 7 µm	Toro+parabola, 4CM,	
			12.2.2	Superbend 6T	Si(111) 5–35 W/B_4C multilayers	3.5 x 10^{11} ph/s @10keV	115 x 78 µm (hv)	CM, DCM: 1st water cooled, FM	
APS	7	**100**	5-BM-D	BM	Si(111) 4.5-80				
			9-BM	BM	Si (111), Si(220) twin 2.1-30 keV	1 x 10^{11} @15 keV	1mm x 1mm		
			10-ID	Undulator A	Si (111) 4.8-32 Si(333) 15-90				
			11-ID-D	Elliptical MPW	Si (220), 4-40	1 x 10^{12} @10 keV	Focused 1000µm x 500µm		
			12-BM	BM	Si (111) 2.4-22 Si (333) 7.5-100		Focused 1x1 mm^2 Unfoc 10x1mm^2		
			13-BM	BM	Si (111) 7-70		unf 50mm x 4mm; Foc 10µm x		

			13-ID	Undulator A	Si 111 4-45		30µm Unf 3mm x 1mm Focus1 60x20µm^2 Focused2 2x2µm^2		
			18-ID	Undulator A	3.2-14; 9.6–42	1.64 *10^{13} ph/s (@12 keV)		2DCM's, Si(111) and Si(400), 1st crystals cryo-cooled, 2nd SB ; VFM (ULE glass)	
			20-BM	BM	Si (111) 2.4-29	1 x 10^{11} @10 keV	Unf 30mm x 1mm Foc 1000x 50µm^2		
			20-ID	Undulator A	Si (111) 4-27 Si (311) 9-50	1 x 10^{13} @10 keV	Unf 1mm x 3mm		
CAMD	1.2 –1.5	300	5B		1 - 15				
CLS	2.9	500	(HXMA) 06ID-1	SC wiggler	Si(111) 5 – 40	6 x 10^{11} ph/s	0.1 x 0.5 mm²		
			SXRMB	BM	InSb (III) 1.7 – 10	>1 x 10^11 ph/s/0.1%bw	0.3 mm x 0.3 mm		
LNLS	1.37	250	D04B-XAS	D04B (15º)	Si(111) 3 – 12 Si(220) 5 – 24	3 x 10^{9} ph/ (s mrad) @ 6 keV	10x1.5 mm^2	Si 111 ChC	
NSLS	2.8	280	X9B	BM	Si(111) 4 – 11.4 Si(220) 5.3 - 18.8	5 x 10^{11} ph/sec @ 10 keV	0.35 x 0.2 mm^2 (focused)	Cylinder, DCM SB crystals	C
			X10C	BM	Si(220) 3.5 – 24.7	~10^{10} ph/sec @ 10 keV	10x0.5 mm^2	DCM, Rh-coated bent toro,	
			X11A	BM	Si(111) 4.5 – 26 Si(311) 8 – 35	1 x 10^{11} ph/sec @ 10 keV	10H x 0.5V (unfocused)	channel-cut	
			X15B	BM	Si111, Ge111, Si220, Si311, InSb, Beryl 0.8 – 15	~1 x 10^{12} ph/sec	~1x1 (@ <3 keV)	Pt-coated glidcop, DCM 1st cooled, Pt-coated ULE (fused silica) toroid	
			X18B	BM	Si(111) 4.8 – 40	1.0 x 10^{10} ph/sec @ 8 keV	25.0 x 1.5mm^2	channel-cut	
			X19A	BM	Si(111) 2.1 – 16.5	5 x 10^{10} ph/sec @ 2.5 keV; 1 x 10^{11} ph/sec @ 10 keV	2 x 1mm^2	Rh-coated glass spherical, DCM, Rh-coated glass toro	
			X23A2	BM	Si(311) 4.9– 30	10^{10} ph/sec @ monochromator bandpass @ 10 keV, 100mA, 2.5 GeV)	25.0 x 1.0mm^2	DCM	
			X23B	BM	Si(111) 3.8 – 11	5.0 x 10^{11} (@ 8 keV, 2.8 GeV, norm. to 250 mA)	2.0 x 2.0mm^2	Pt-coated silicon collimating, DCM, Pt-coated quartz toroidal	
SSRL SPEAR-3	3	100	2-3	1.3T BM	Si(111), Si(220) or Si(400) 2.4 - 30		15 x 2.0mm^2	Unfocused, DCM	
			3-3	BM	Si(111) 2.08 – 4		2.5 x 1mm^2	Ni-coated bent cylinder Silicon, DCM variable exit height	
			4-1	8-pole, 1.8T Wiggler	Si(111), Si(220), Si(400) 2.4 – 35		20.0 x 2.0mm^2	No optics, tiny hutch	
			4-3	8-pole, 1.8T Wiggler	Si(111), Si(220), Si(400) 2.4 – 35		Unf 20 x 2.0mm^2 Foc 20 x 0.15mm^2	Elliptical, Pt-coated	
			6-2	54-pole, 1.0T	2.05 - 32		Unf 20 x 2.0mm^2	Bent cyl, Corning 7940, Pt-coated	

				Wiggler			Foc 4 x 0.5mm^2	LN_2-cooled monochromator Bent flat, Corning 7940, Ni-coated	
			7-3	8-pole, 1.8T Wiggler	Si(111), Si(220), Si(400) 2.4 - 35		20.0 x 2.0mm^2	No optics	
			9-3	16-pole, 2.0T Wiggler	4.6 - 40		20.0 x 2.0mm^2	LN_2-cooled monochromator (two cuts)	
			10-2	30-pole, 1.45T Wiggler	Si(111) phi=90° or Si(220) phi=90° 4.5-45		Unf 20 x 2.0mm^2 foc 0.45 x 0.2 mm^2	Bent cylinder, fused quartz, Rh-coated, Si single-crystal, DCM LN cooled	
			11-2	26-pole, 2.0T Wiggler	4.5 - 37		Unf 30 x 3.0mm^2 foc 3.0 x 0.5 mm^2	LN_2-cooled monochromator (2 cuts)	
Asia									
BSRF	2.2	100	BL - 4W1B XAFS	Single period wiggler 4W1, 1.8T, E_c=5.8 keV	Si 111, 220, or 311 4 ~ 22	1.5×10^{10} ph/sec / 0.1%b.w	10×1 mm^2	DCM, no mirrors	
NSRRC (TPS)	1.5	240	BL01C	SC Wavelength Shifter	6 – 33	1×10^{11} ph/sec	0.9×0.2 mm^2	CM, DCM, FM	
			BL15B	BM	Si(111), InSb(111), Beryl(1010) 1 – 9	3×10^{11} ph/s	1×0.5	CM water-cooled glidcop, DCM, bent toroidal glidcop FM, high-order-harmonic rejection mirror	
			BL17C	Wiggler 20 (1.8T)	Si(111) 4 – 15	$10^9 \sim 10^{10}$ ph/s	8×3	water-cooled CM, DCM, water-cooled bent toroidal	
			BL20B	BM	Ge(111) Ge(220)., 3.5 ~ 12		20 mm × 10 mm	no mirrors, DCM	
			SP12B (@Spring-8)	BM (E_c=28.9)	Si(111) 5 – 70	5×10^{10} - 10^{12} ph/s	0.25×0.25 mm^2	dual-strip (Rh+Si) CM, variable-inclined DCM, toroidal Rh-coated FM	
PAL	2.5	180	3C1 EXAFS	BM (Ec=5.5 keV)	Si(111) 2 – 13 Si(333) 6 – 40	10^9-10^{10} ph/sec	20 mm × 10 mm	DCM, harmonic rejection M	
			8C1	BM (Ec=5.5 keV)	Si(111) 3~22	10^{12} ph/sec	unf 40 x 2 mm^2 foc 0.5 x 0.2 mm^2	CM, DCM SB 2nd , FM	○
PF (KEK)			BL-7C	BM	Si(111) 4 – 34 Si(311) 6 – 34	1 x 10^{11} ph/s	1.5 x 1 mm^2	DCM w SB 2nd, focusing double fused quartz M.	○
PF-SR	2.5	400	BL-8B	BM	InSb(111) and Si(311) 1.7 – 21	5̃ 10^{10} ph/s at 1800 eV	1.9 mm x̣0.5 mm	DCM, no mirrors	
			BL-9A	BM	Si(111) 2.1 - 15	4 x 10^{11} ph/s at 9 keV	1 x 0.35 mm^2	Rh-coated CM, DCM, Rh-coated FM, double M Rh- and Ni-coated	
			BL-9C	BM	Si(111) 4 – 16 Si(311) 6 - 23	7 x 10^{10} ph/s	1 x 1 mm^2	DCM, Rh-coated bent cyl FM	
			BL-12C	BM	Si(111) 5 – 16 Si(311) 6 - 23	5 x 10^{10} ph/s	<1 mm x 1 mm	DCM, bent cyl Rh-coated FM	
			BL-13B	Linear MPW#13-W Ec=6.24keV	Si(111) 4~29	1x10^{12}/s·mm^2 @11keV	~5mm x ~1.5mm	DCM w SB 2nd, no mirrors	○
PF (KEK)			NW10A	BM, Ec=26.3 keV	Si(311) 8 - 42	6 x 10^{10} ph/s at 25keV	0.5 mm x 1.1 mm	DCM, Pt-coated FM	
PF-AR	6.5	60							
Spring-8	8	100	BL01B1		3.8 – 113	10^9 – 10^{11} ph/s		Rh-coated CM, DCM, Rh-coated FM	
			BL19B2		5 – 100	~10^9 ph/s		DCM, double M	

SSLS Helios-2	0.7	500	XDD	BM 4.5T	Si (111) 2.3-10	5.6×10^{10} ph/s @8 keV, focused	3.1 x 0.8 mm^2	Pt coated, bent conical CM, ChC mono, Pt coated bent conical FM	
Australia									
Boomerang	3	200	XAS	MPW100, 1.9T, Ec=11.6 keV, P_{tot}=8.5 kW, 2m, 14mm, power in 2x0.25mrad=2.5 kW	Si(111) 4 –36 Si(311) 5.5 –~ 50 Si(333) > 50 700 W	> 10^{12}ph / s		Si, Rh and Pt stripes CM, LN2 cooled (both crystals) DCM, Dual toroid FM	
	26		**86**						