Beam tube	6T (thermal source)
Monochromator	Cu 111
Incident wavelength	1.159 Å
Maximal beam size	2 x 2 cm^2
Neutron flux at specimen	10^7 n cm^{-2} s^{-1}
Collimation	α_1 = 10', 15', 54'
	α_3 = 10', 60'
Range of monochromator angle	$2\theta_m$ = 32°
Ranges of spectrometer angles	-20° < θ < 80°
	-10° < ω < 40°
	0° < χ < 180°
	0° < φ < 360°
Detector	^{3}He
equipement	Furnace for in situ measurements T < 950°C

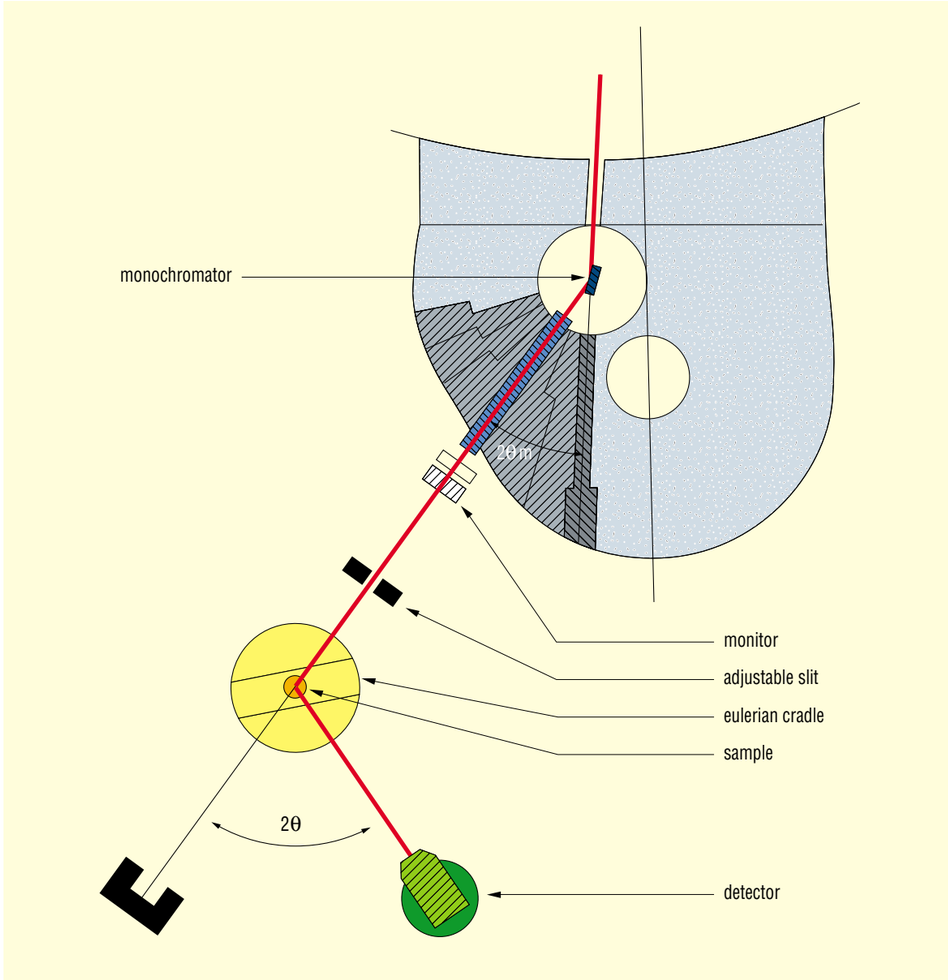
The 6 T1 diffractometer is dedicated to pole figure determination, for crystallographic texture analysis.
Neutron diffraction technique allows to measure complete pole figures in transmission mode and to analyse large volumes up to 1 cm^3. This technique is useful for large grain materials, or heterogeneous materials. It allows characterising the texture of minority phases. Moreover, no surface preparation is required for the sample.

The neutron wavelength is 1.159 Å, selected by a Cu (111) monochromator. The maximal beam size is 2 x 2 cm^2 but a window device can reduce it. The diffractometer is equipped with a deported Eulerian cradle (Frank Heydrich Ø 400 mm) with 0.01° precision. The sample-counter distance can change between 80 and 150 cm.

Depending on the aim of experiment, various collimations of the incident and diffracted beam can be used. The 6 T1 resolution allows determining the energy stored in the grains during the deformation as a function of crystallographic orientation through Bragg peak broadening analysis.

A Windows NT PC computer pilots the diffractometer. The pole figure measurement time is at least 2 or 3 hours (grid 5° x 5°).

Moreover, at the LLB, several programs are available to calculate the Orientation Distribution Function using harmonic or vectorial methods.



General layout of the diffractometer 6 T1.

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