

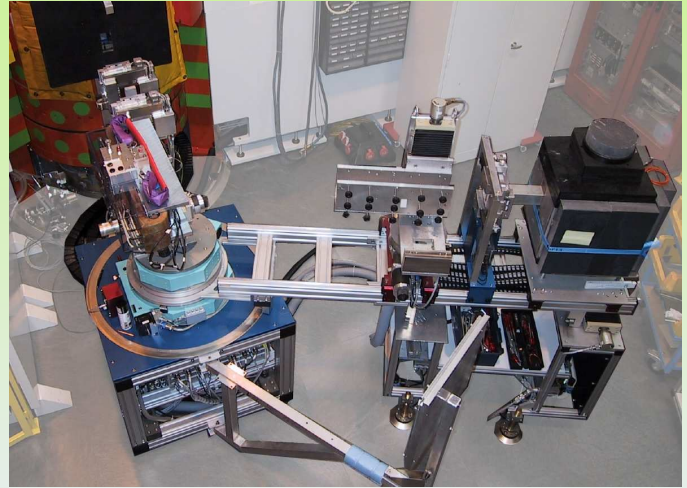
# TOPSI — a modular two-axes diffractometer

Responsible: J. Stahn, M. Gupta

TOPSI is a multi-purpose instrument for test experiments. In the basic set-up it is a two-axes diffractometer with the opportunity to insert or add modules in between monochromator and sample position, on the sample table, and at the  $2\theta$ -drive.

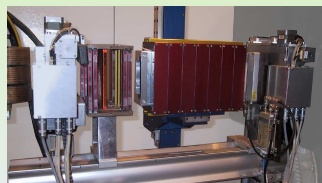
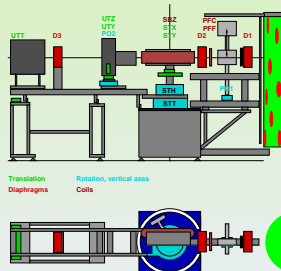
## Basic Features and Technical Specification

monochromators	graphite (002) & (004) Si (111), etc.
wavelength-range	$2.3 \text{ \AA} < \lambda < 6 \text{ \AA}$
flux maximum	$\approx 4 \text{ \AA}$
scattering plane	horizontal
$2\theta$ -range	up to $130^\circ$
intensity ( $4.74 \text{ \AA}$ )	$2 \cdot 10^4 \text{ s}^{-1} \text{ cm}^{-2}$



## Polarized Reflectometry

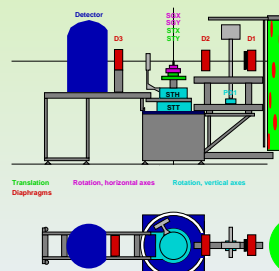
dynamic range	$10^5$ to $10^6$
polarization	transmission supermirror polarizer Mezei-type spin flipper
sample magnet	vertical or horizontal, 15 cm gap, 50 cm long, $-1000 \text{ Oe} < B_z < 1000 \text{ Oe}$
analysis option	remnant switchable transmission polarizer multy reflection set-up (unpolarized)



first and second diaphragms with polarizer magnet and spin flipper

## Diffraction

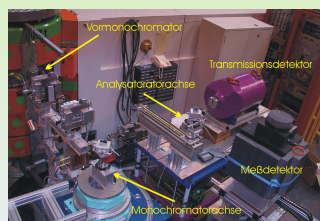
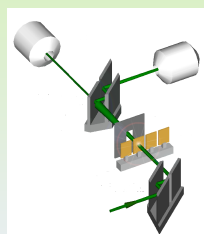
$q$ -range	$0.2 \text{ \AA}^{-1} < q = 4\pi/2d < 5.4 \text{ \AA}^{-1}$
options	4-circle diffractometer (with Euler cradle) x and y translation and tilting (see sketch)
environment	standard SINQ-equipment e.g. CTI, APD



## Ultra Small Angle Neutron Scattering

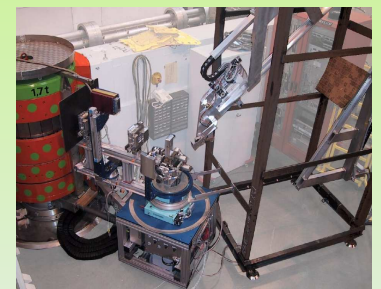
A Borse-Hard camera was set up for tests (E. Jericha). It will be a permanent option from 2003 on.

$q$ -range	$2.5 \times 10^{-5} \text{ \AA}^{-1} < q < 3 \times 10^{-4} \text{ \AA}^{-1}$
resolution	$0.6 \mu\text{m}$ to $25 \mu\text{m}$
peak intensity	$600 \text{ s}^{-1} \text{ cm}^2$
peak to background	$3.5 \times 10^3$



## Exotic Tests

E.g.  
a prototype analyzer- and detector-segment for the new back-scattering instrument MARS (SINQ) was tested upside down



Measuring time on TOPSI is not accesible via the normal allocation scheme. Please ask Jochen Stahn (jochen.stahn@psi.ch) for details.