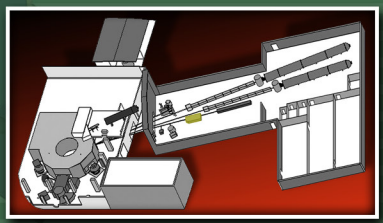
# Instrument Fact Sheet

BEAM LINE

# CG-4C

High Flux Isotope Reactor



## US/Japan Cold Neutron Triple-Axis Spectrometer

The US/Japan Cold Neutron Triple-Axis Spectrometer is a conventional triple-axis spectrometer with variable incident energy and variable monochromator-sample and sample-analyzer distances. The cold guide 4 bender and guide hall shielding reduce background levels at CG-4C, and the 15 cm tall guide profile is well exploited by CG-4C's vertically focusing monochromator PG (002). To enhance accommodation of strong magnetic fields at the sample position and to simplify future polarization analysis, the amount of ferromagnetic material has been minimized in the construction of this instrument.

CG-4C is a collaboration of the Neutron Sciences Directorate at Oak Ridge National Laboratory and the Neutron Science Laboratory, Institute for Solid State Physics, at the University of Tokyo, as part of the US-Japan Cooperative Program on Neutron Scattering..

## Applications

- Investigations of the low-energy, atomic-scale dynamics of crystalline solids
- High-resolution measurement of low-energy excitations with high signal-to-noise ratios due to low background

## Specifications

| | |
|---|---|
| Incident energy range PG (002) | 2–20 meV |
| Final energy range PG (002) | ≥3.0 meV |
| Monochromators | Variable vertical focusing PG (002) |
| Analyzer | ≥3.0 meV [fixed vertically and variable horizontally focusing PG (002)] |
| Sample scattering angles | -15° ≤ 2Θs ≤ 115°, with additional restrictions depending on Ei |
| Analyzer angle | <103° |
| Collimations | Pre analyzer: 20', 40', 80'; Pre detector: 80', 120', 240' |
| Detector | Single $He^3$ detector |
| Resolution | Best elastic energy resolution ~0.1 meV |

Status: Available to users


**For more information, contact**

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