- 4D-Space Access Neutron Spectrometer (4SEASONS) -

BL01, MLF@J-PARC

Measurement of lattice and spin dynamics over 4D Q- ω space with high efficiency and medium resolution



Contacts: R. Kajimoto (ryoichi.kajimoto@j-parc.jp)
M. Nakamura (mitsutaka.nakamura@j-parc.jp)
K. Kamazawa (k. kamazawa@cross.or.jp)

- Clarification of the lattice and spin dynamics that produce the high-T_c superconductivity
 - Hourglass-shaped magnetic excitations
 - Softening of the half-breathing mode of phonons
 - etc...
- Other novel phenomena in strongly correlated electron systems

Feature

High efficiency inelastic scattering measurement is achieved by...

- High flux from the coupled moderator
- Converging neutron guide with high-Q_c supermirrors
- Large solid angle of detector coverage
- Multiple-E_i measurement with Repetition Rate Multiplication

Specification

- Flight Path: $L_1 = 18 \text{ m}$, $L_2 = 2.5 \text{ m}$, $L_3 = 1.7 \text{ m}$
- Incident Energy: 5 < E_i < 300 meV</p>
- Energy Resolution: $\Delta\hbar\omega/E_i > 5\%$ ($\hbar\omega = 0$)
- Momentum Resolution: ∆Q/k_i ~1.5%
- Detectors: ³He PSDs (2.5m, 16atm, Φ3/4")
 -35° 84° (horizontal); -25° 27° (vertical)