

High energy-resolution measurements at RCNP

At RCNP, we constructed in 2000 a beam line which can accomplish both the lateral and angular dispersion matching between the beam line and the magnetic spectrometer Grand Raiden.(GR). GR is characterized by its high resolving power of $D/M\Delta x=37,000$ with the dispersion of $D=15,451$ mm. This large dispersion requires small energy spreads of the primary beam itself. Developments have been performed to deliver high quality beams on targets. No slits are installed in the beam line after the Ring cyclotron, because there are not enough spaces to cut beam halos generated by edge scatterings from slits. After the commissioning of the system, many experiments have been successfully performed with such beams as protons, ^3He , ^4He , etc. I will present the design of the beam line and experiences and performances of the system so far.

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