

## **Comparison between Measured and Calculated Results of Dose Rate in 18 MeV X-Ray Radiotherapy Room**

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Measurements of dose rate for photons and neutrons have been performed in 18 MeV X-ray radiotherapy room by using glass dosimeter and CR-39. Dose rates in the maze and outside of the shielding door were also measured by using ionization chamber and Rem-counter.

The measured values were compared with calculated ones by MCNP5 and empirical formula. For MCNP5 calculation, good agreements of photon dose rates were observed, but overestimations for calculated neutron dose rates of about factor 2 were obtained except outside of the shielding wall. Good agreements in the maze were also observed between measured value and calculated results by empirical formula. However, there exists large discrepancy of calculated results outside of the shielding door greater than 1 order of magnitude.

To improve the accuracy of MCNP5 calculation, further investigation of layout and composition of structural and shielding materials around the target would be very necessary.