
Physics with neutrons 2 / Instrumentation with neutrons

Dr. Sebastian Mühlbauer, sebastian.muehlbauer@frm2.tum.de
Prof. Dr. Peter Böni
Summer semester 2016
Exercise sheet 11
Due 2016-July-1

Lukas Karge, lukas.karge@frm2.tum.de, Tel.: 089-289-11774
Steffen Säubert, steffen.saeubert@frm2.tum.de
Tobias Weber, tweber@frm2.tum.de

EXERCISE 8.1

Construct the phase diagram for a quadratic beam tube made from nickel with a length of 4 m and a width of 60 mm for $\lambda = 2 \text{ \AA}$. Draw the intensity vs. angle of exiting neutrons. How would the phase space diagram (schematically) look like for a curved guide?

EXERCISE 8.2

The line-of-sight distance of a multi-channel bender is reduced by the number of channels used when compared with L_s of a curved guide. However, the thin dividing blades usually do not absorb the neutrons well enough. Calculate the effective line-of-sight of a multi-channel bender when it is followed by a straight guide.