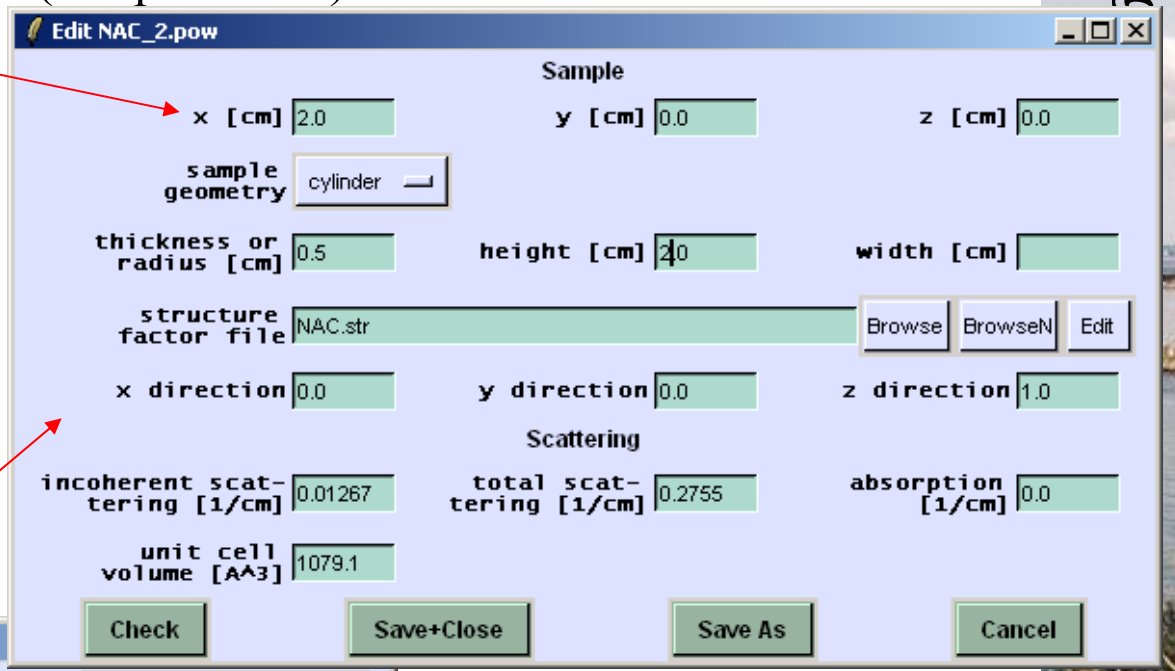
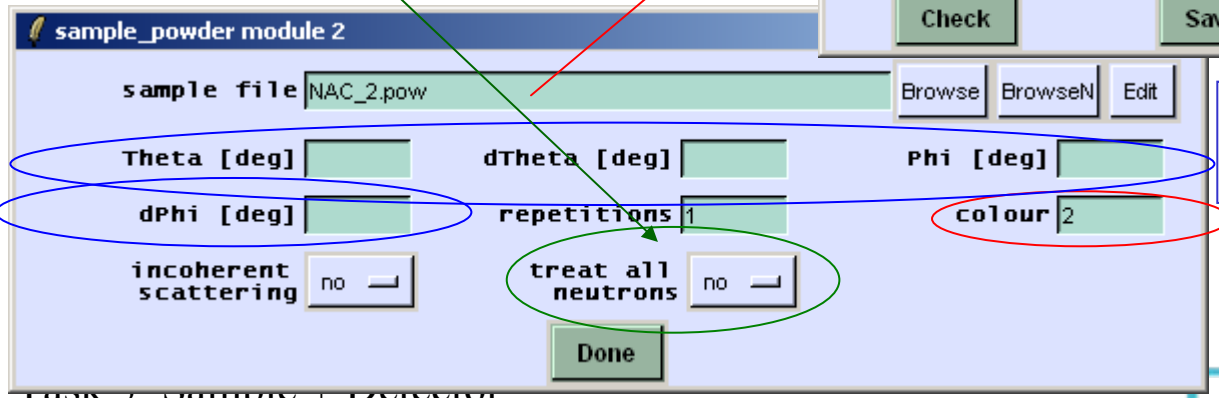
Task 3.1: Powder Sample

1. Use a 'user wavelength distribution file' from a previous task to create a source of 1 cm diameter and bring neutrons of 1.99 – 2.01 Å to a spot of 2 x 2 cm^2 in a distance of 4 m
2. Add a cylindrical sample_powder (sample: NAC) of 1 cm diameter and 2 cm height in 2 cm distance.
3. Add 'mon2_div' to visualize Bragg rings





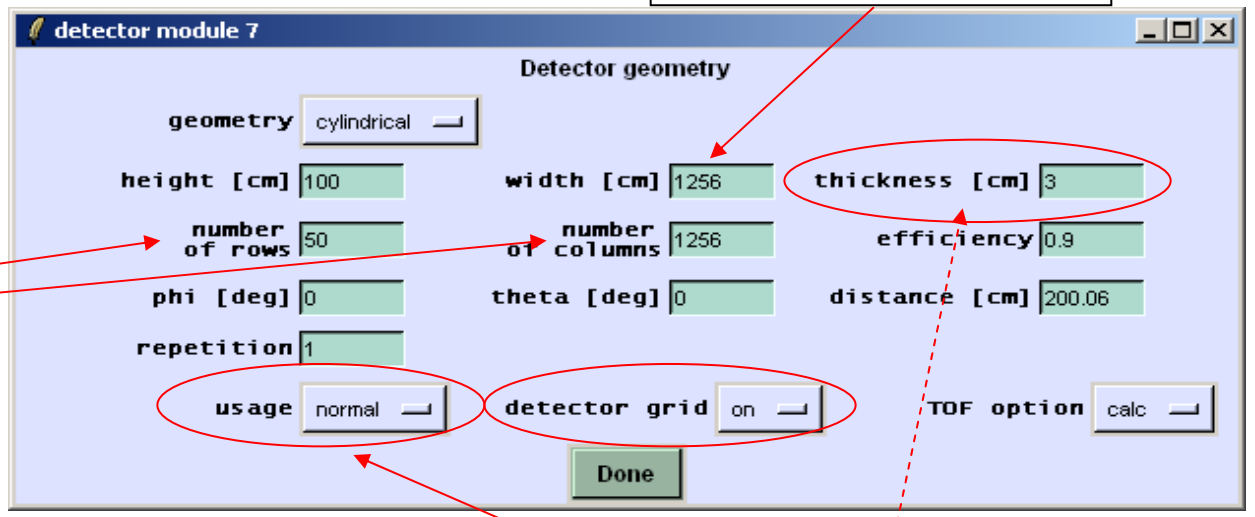
Remove neutrons that are not scattered

Restriction of the solid angle into which neutrons are scattered

Mark scattered neutrons

Task 3.1: Detector

1. Add a cylindrical detector of 1 m height and 2 m radius all around the sample
2. Add ‘eval_elast’ to see intensity as a function of scattering angle and to determine d-spacings



total length of the detector

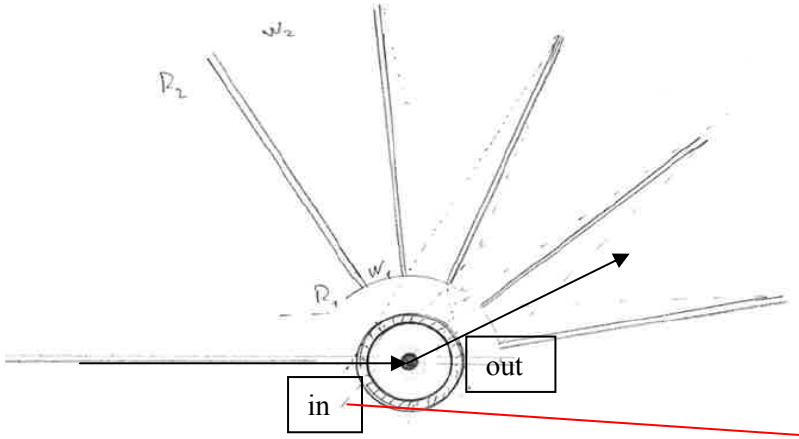
determines size of the detector cells

normal: wavelength dependent detection probability + diffusion into neighboring cells

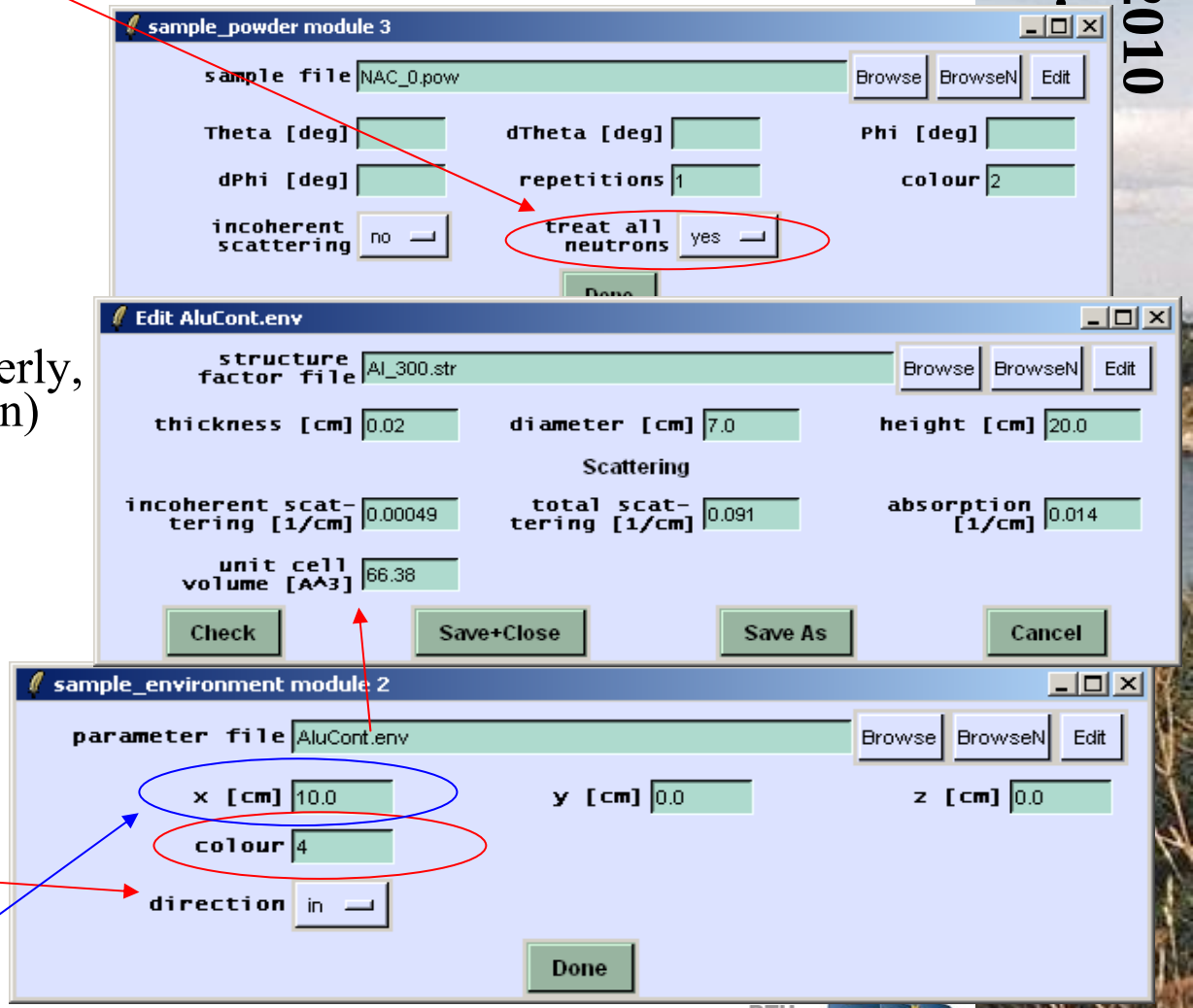
Task 3.2: Background by Sample Environment

1. Add a concentric aluminum cylinder of 7 cm diameter and 0.2 mm (Alu_cont.env) thickness around the sample using twice the module 'sample_environment', now transmitted neutrons must be treated as well
2. Estimate the background by
   - coloring neutrons and
   - checking the log file and/or separating the contributions using eval_elast

(some trajectories are not treated properly, bug will be fixed i the next version)

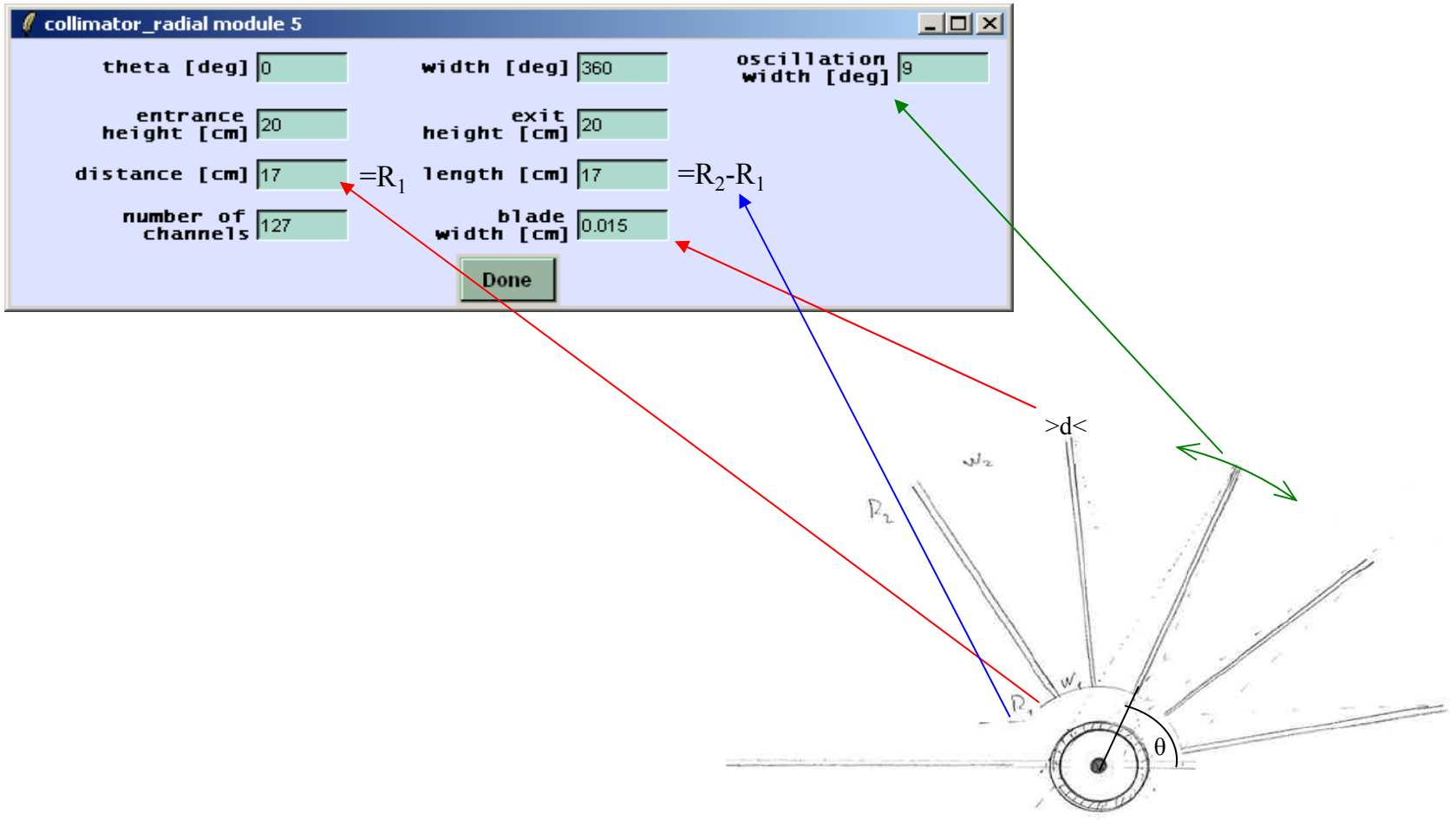


Stop beam in front of the sample environment



Task 3.2: Radial Collimator

1. If you like: add a radial collimator around the aluminum cylinder and check the reduction of background



Task 3.2: Eval_elast

parameter:

scattering angle
d-spacing
Q