

Task 1.1: Source + Linear Guide + Monitors

1. Define new directory for simulation
'parameter directory' | "NewDir" -> Browse + Give Name
2. Define Source
 - Module 1 – chose 'inactive'|'source'|'source constant wave'
 - Show parameters by clicking on "->"
 - Give name of 'moderator description file', e.g. "constant.mod"
 - Choose "Edit" this file
 - Chose 'shape' "circular" and set 'moderator diameter' 12 cm as well as center of moderator X', '...Y' and '...Z' = (0,0,0) cm
 - Give name of 'user wavelength distribution file', e.g. "constant.dat"
 - Give intensities: 0.0 Å 1.0e12 (first row)
and 20.0 Å 1.0e12 (second row)
 - Finish with "Save+Close"
 - Give 'min. wavelength' and 'max. wavelength' 1 – 10 Å
 - Chose 'direction defined' "by virtual window"
 - Fill propagation with 'Distance to window' 150 cm
'window width' and 'window height' 6 cm
 - SAVE as 'GuideLinear.gui'

Task 1.1: Source + Linear Guide + Monitors



3. Define Guide

- Module 2 – chose ‘inactive’|’guide’|’guide’
- Set ‘entrance width’, ‘... height’, ‘exit width’ and ‘... height’ = 10 cm
- Switch “AutoPlot” off
- Give ‘piece length’ (2000 cm)
- Browse *InstallationDirectory*|FILES|reflectivity files|mirr1a.dat to fill ‘left plane’ to have a m=1 coating
- SAVE instrument

4. Include Space

- Make space for a new module by clicking on ‘arrow_down’ of module 2
- Module 2 – chose ‘inactive’|’space and window’|’space’
- Give ‘distance’ 150 cm

Task 1.1: Source + Linear Guide + Monitors

4. Define Position Monitor

- Module 4 – chose ‘inactive’|’visualize data’|’mon2_pos’
- Set ‘minimal y-value’ and ‘minimal z-value’ to -3.5
- Set ‘maximal y-value’ and ‘maximal z-value’ to 3.5
- Set ‘number y-bins’ and ‘number z-bins’ to 70

5. Define Divergence Monitor

- Module 5 – chose ‘inactive’|’visualize data’|’mon2_div’
- Set all ‘minimal ...’ and ‘maximal ...’ values to 5
- Switch “AutoPlot” off
- SAVE instrument

6. Finish

- “Check”, “Start”
- Check log file
- Check by looking at ‘File’|’Edit *.inf file’|instrument.inf

Task 1.1: Source + Linear Guide + Monitors – vary m-value

5. Vary m-value of guide

- Copy mirr30opt, mirr40opt from *InstallationDirectory*|FILES|reflectivity files to *parameter directory*
- Start ‘Tools|GenerateMirrorFiles’ and give
 - reflectivity(Q=0): 1
 - m =... : 2
 - $Q_c = \dots$: 0.0217
 - reflectivity(m* Q_c): 0.95
 - Width : 0.0033
 - Name : “mirr20opt.dat” and terminate
- Click on the texts ‘left plane’, ‘right plane’ and ‘top plane’ of the guide module
- Chose ‘File|GenerateSeries’
- Set 4 Iterations
- Go “>>” and fill table with ‘mirr1a.dat’, ‘mirr20opt.dat’, ‘mirr30opt.dat’ and ‘mirr40opt.dat’
- Fill ‘files to be copied’ with ‘pos.dat’, ‘div.dat’ and ‘instrument.inf’
- SAVE instrument and START