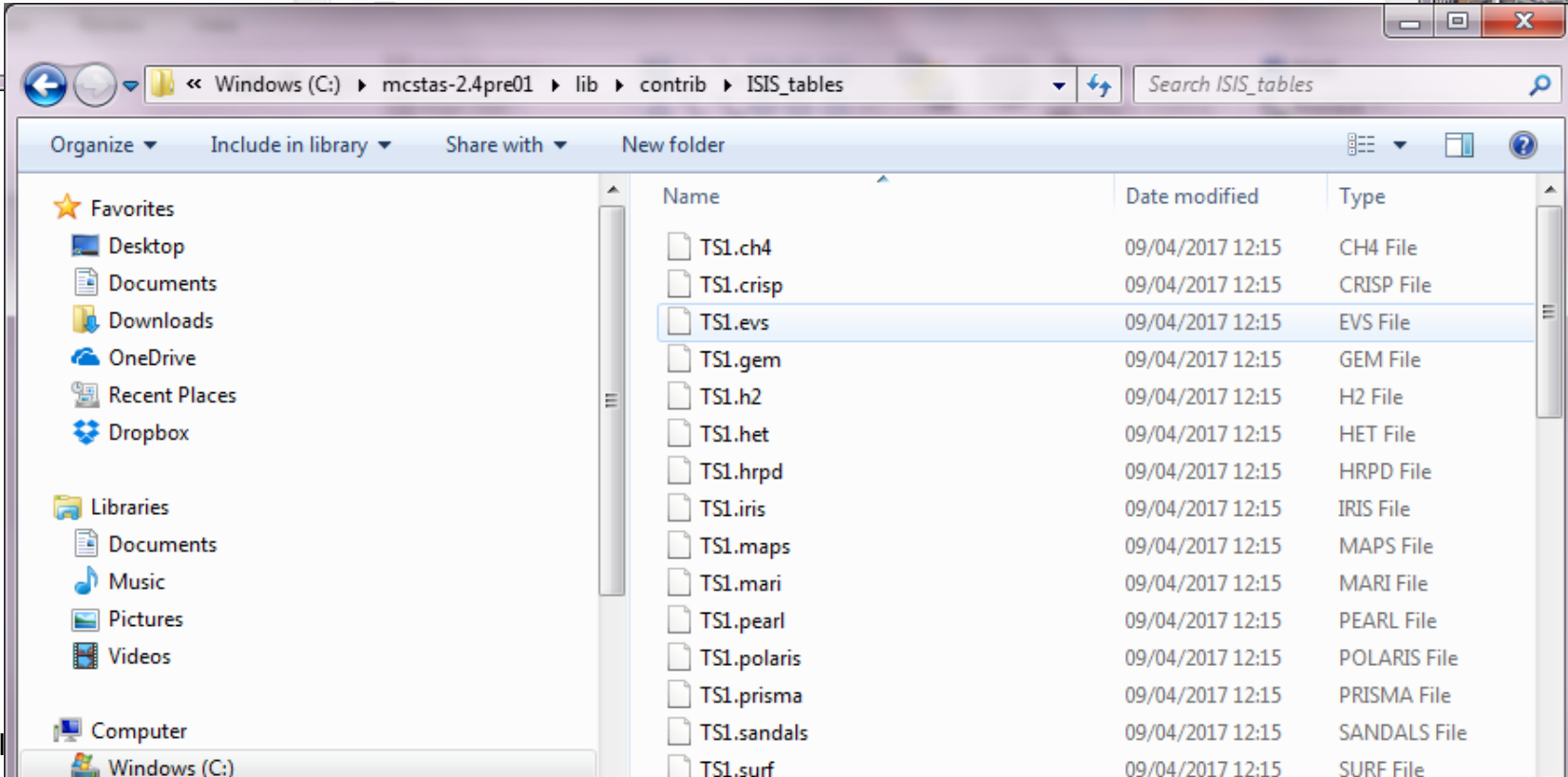
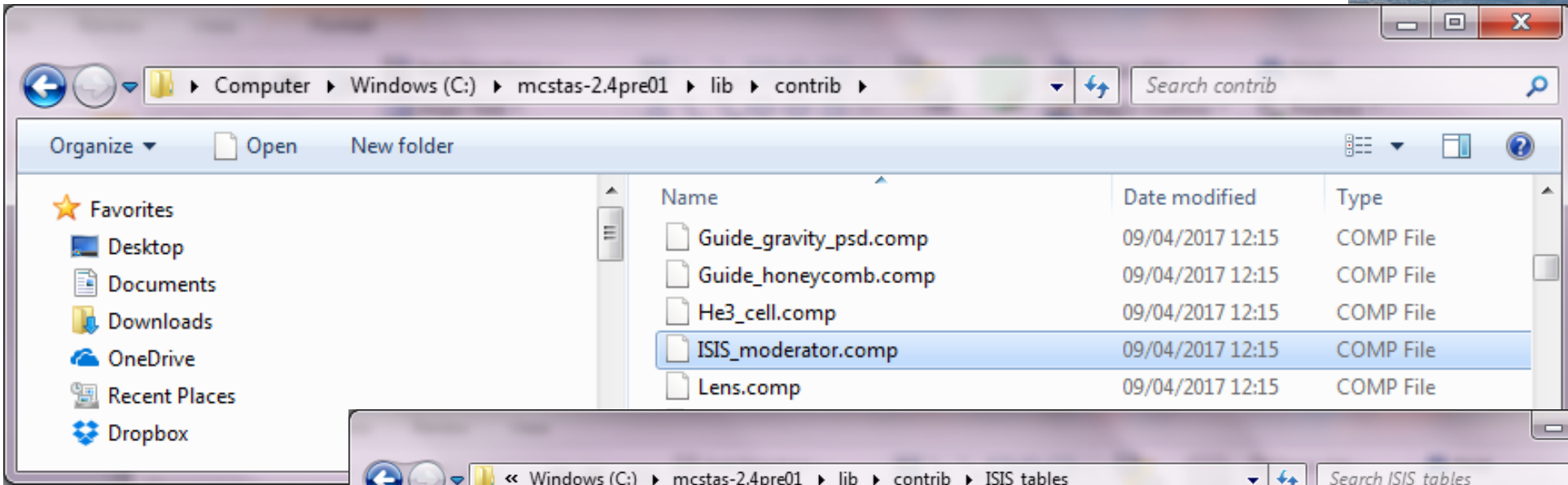


ISIS moderators



Component: **ISIS_moderator**

- Written by: S. Ansell and D. Champion in August 2005
- Release: McStas 1.9
- Produces a TS1 or TS2 ISIS moderator distribution. The **Face** argument determines which moderator is to be sampled.
- Neutrons are created having a range of energies determined by the **Emin** and **Emax** arguments.
- Trajectories are produced such that they pass through the moderator face (defined by **modXsize** and **yheight**) and a **focusing rectangle** (defined by **xh**, **focus_yh** and **dist**).
- The focusing rectangle could be, for example, your sample.**



Component: **ViewModISISver1**



Modification of **ViewModerator4** component written by S. Ansell in 2015

Written by: S. Ansell and **Goran Škoro** in Feb 2016

Release: **McStas 2.4 (?)**, tested on 2.0 and 2.2

Please note that **ViewModerator(1 to 4)** are not supported anymore.

Please note that you need to use this component rather than **ISIS_moderator.comp** if you want to use the **new moderator files produced by the neutronics group (see in the workshop folder)**. These are the most accurate model currently available.

It is still a beta version but so far no major complaints have been received.



Why a new moderator component?

The main difference with the previously distributed ISIS_moderator is that neutrons can be produced from the shutter front face rather than from the moderator face.

modPosition=1

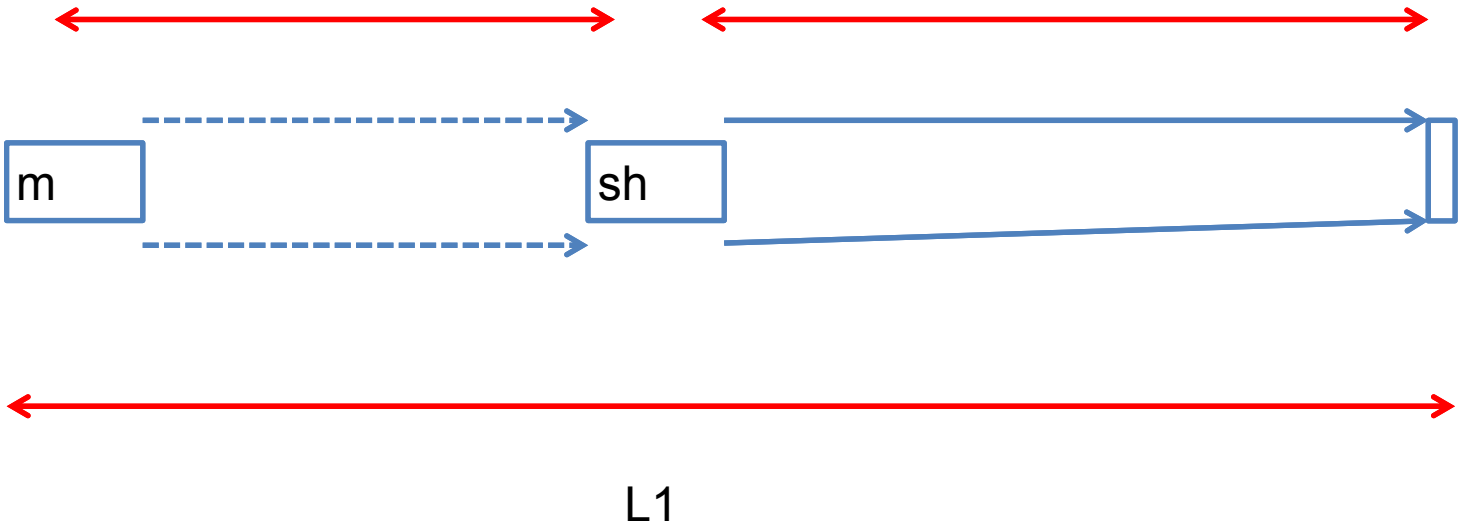
The trajectories (and corresponding timings) are then projected backwards towards the moderator face, as well as forwards.

This option was necessary during the neutronics development phase of the TS1 project, when the moderator position, orientation and size and therefore the position of its front face was frequently changing. The shutter position was then the only stable reference point.

Running this option is non-trivial and requires further adjustments to your instrument file (details will be available for the record).



modPosition=1



So what do I do?

- | We have now reached the point where the moderators sizes are mostly fixed and therefore it is recommended that the moderator is used with the option **modPosition=0**
- | i.e. generating neutrons from the front face of the moderator as standard
- | With this option set to 0, the moderator component runs trivially like the previous ISIS_moderator, i.e. you only need to choose your energy interval (E0,E1), the size of your moderator face (modXsize, modZsize) and the size and distance for your focusing face(xw,yh,dist).
- | And of course you need to choose your instrument/face/port.



modPosition=0



L1

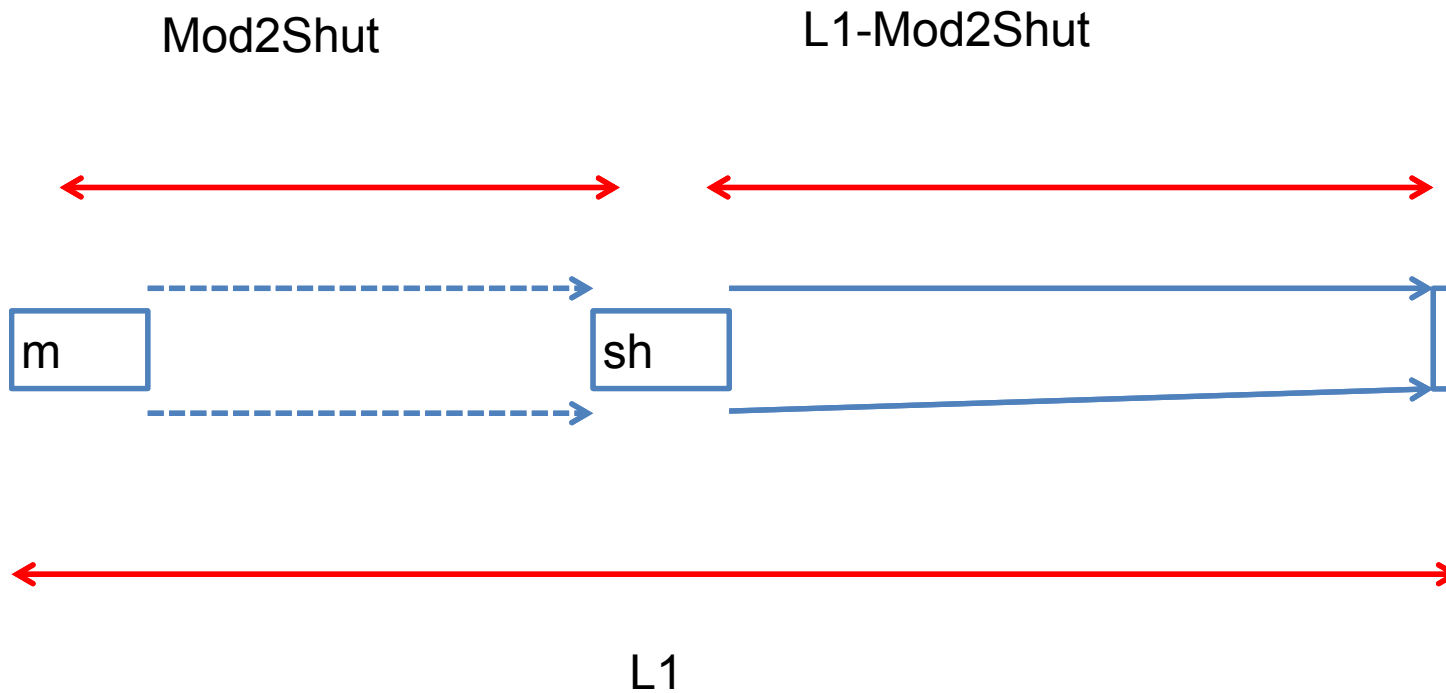


Using modPosition=1

- Not recommended option, generating neutrons from the shutter face.
- These instructions have been given to me by Goran Škoro some time ago but have not been revised by him in the current format.
- Adjustments necessary to the instrument file:
 1. Find out all the **moderator to shutter position** by looking into the actual moderator file. In the first few lines of the **.mcstas file**, look for **TimeOffset=167** (for example). This means that the shutter is placed at 1.67m from the moderator face (Mod2Shut=1.67)
 2. Rescale all distances by this distance, i.e. the **sample is now at L1-Mod2Shut**
 3. Remember that also the variable **dist** for the focusing window is now **L1-Mod2Shut**



modPosition=1



Mod2Shut is called TimeOffset in the .mcstas file.
 $\text{Mod2Shut [m]} = \text{TimeOffset} / 100$

As a final warning, remember that in real life not all neutrons are created equally at the face of the moderator, and this becomes part of the accuracy of you experiment as well as of your simulation.

