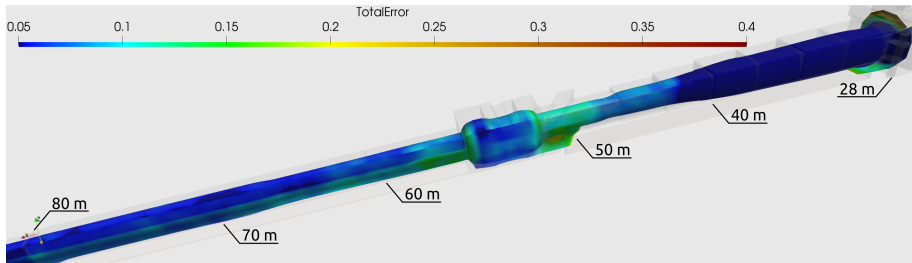## Using the code written

ESS-Bilbao has been using the code to calculate a possible shielding for the MIRACLES Beamline and the application of the Common Shielding. Integrated, neutron source to sample calculation is made possible with the existing computing estructure, allowing for shielding optimization throughout the entire guide.

Spreading the work

- We have contacted ORNL in order to make the improvements available in future versions of MCNP6. This would require a code revision and also implementation of output information that is currently missing. Right now we still do not have an answer.

- Besides, the work has been submitted to Nuclear Instruments and Methods in Physics Research A, as NIMA-D-19-00551, and is currently under editor comments. This paper will be published as OpenAccess.

- Current status of use by ESS partners?

Using the transmission tables

The compiled tranmission tables are intended to provide quick shielding solutions for shielding in a variety of problems. For instance, they could be used to quickly assess possible shielding solutions for the Upper bay.

The tranmission tables have been compared to the Monte Carlo simulation of composite shielding and found 10 to 20% deviation, which is quite reasonable for shielding calculations.

Validating the tables with experiments

However, the main point is still standing: Comparison with experimental results. Discussion with PSI and/or RAL is needed for this point. ChipIR in particular is an interesting instrument for comparison.