
Contribution ID: **182** Type: **Poster**

# Experimental Cave Design for Neutron Diffraction at a High Brilliance Source

*Wednesday, 26 September 2018 18:40 (1 hour)*

The objective of the presented cave is to shield users from radiation of a series of macromolecular neutron diffraction experiments planned at European Spallation Source being constructed in Lund Sweden. The design process was iterative considering physical (radiological) and engineering constraints. The vicinity of the cave is considered as supervised area and a factor two was considered as conservatism of the numerical modelling the dose consequence by MCNP code. The architectural design concept has changed multiple times; the final layout contains a labyrinth and a steel door behind. The structure is constructed of reinforced, prefabricated blocks. This solution was chosen to be able to disassemble and reassemble the full cave without dust generation. This resulted in many, previously unseen engineering challenges.

**Primary author:** Prof. TOROK, Szabina (HAS Centre for Energy Research)

**Co-authors:** Dr NÁFRÁDI, Gabor (Institute of Nuclear Techniques (NTI), Budapest University of Technology and Economics, Hungary); Dr APRIGLIANO, Giuseppe (European Spallation Source, Lund, Sweden); Dr ZAGYVAI, Peter (HAS Centre for Energy Research, Budapest, Hungary); Dr SUGAR, Viktoria (HAS Centre for Energy Research, Budapest, Hungary)

**Presenter:** Prof. TOROK, Szabina (HAS Centre for Energy Research)

**Session Classification:** PS2 - Poster session