

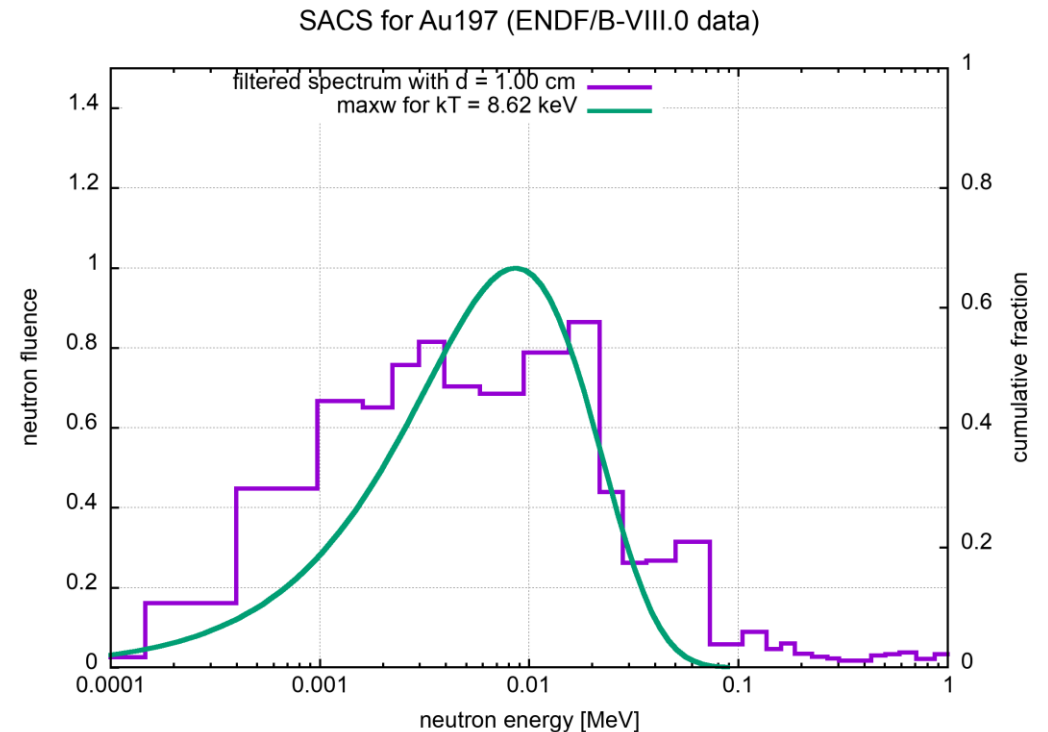
NEAR station simulations with Geant4

RIUNIONE NAZIONALE N_TOF

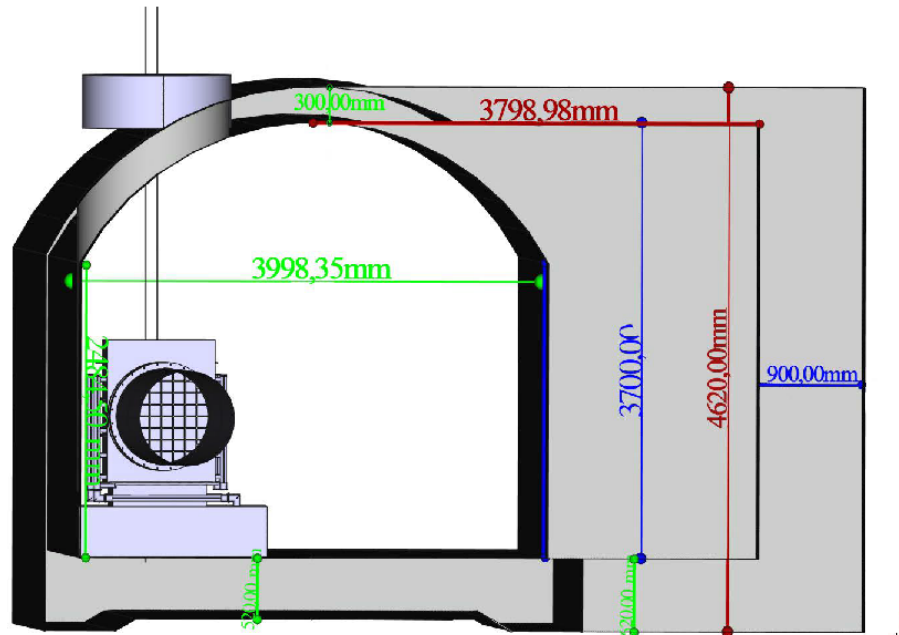
RICCARDO MUCCIOLA

Objective of simulations

- Test different filters to obtain a Maxwellian spectrum,
- Simulate the full spectrum from the shielding wall
- Complete simulation of all possible neutron scatterings inside the station

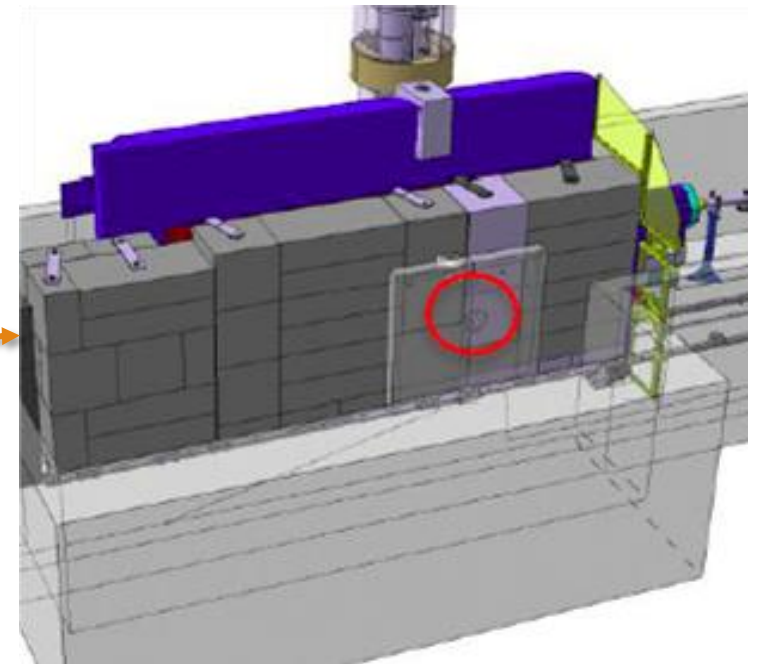


NEAR station dimensions

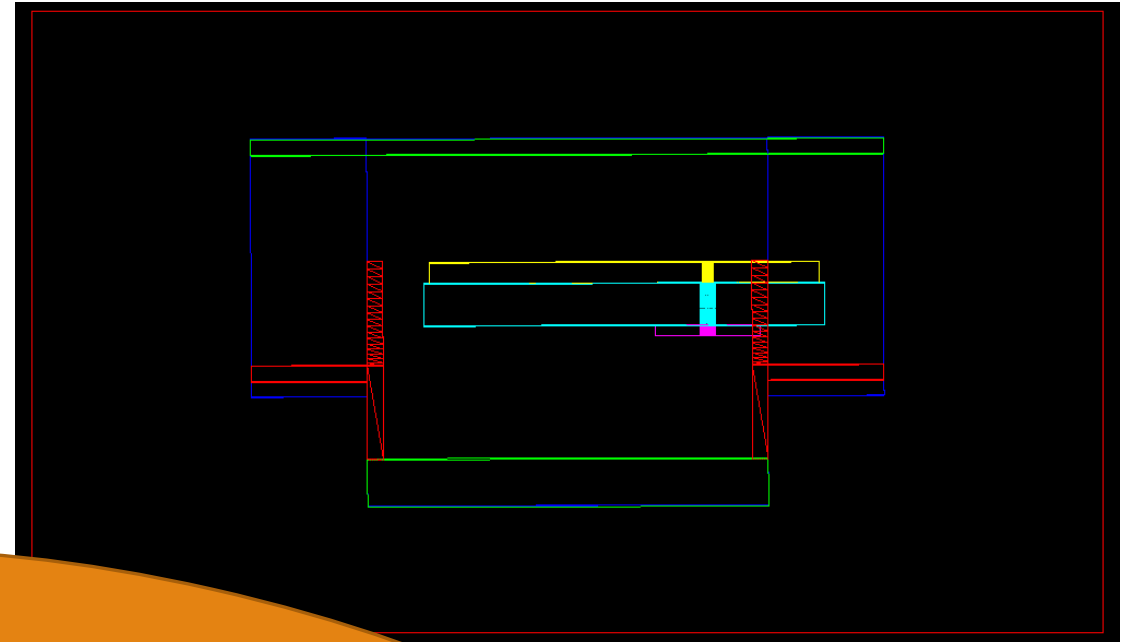
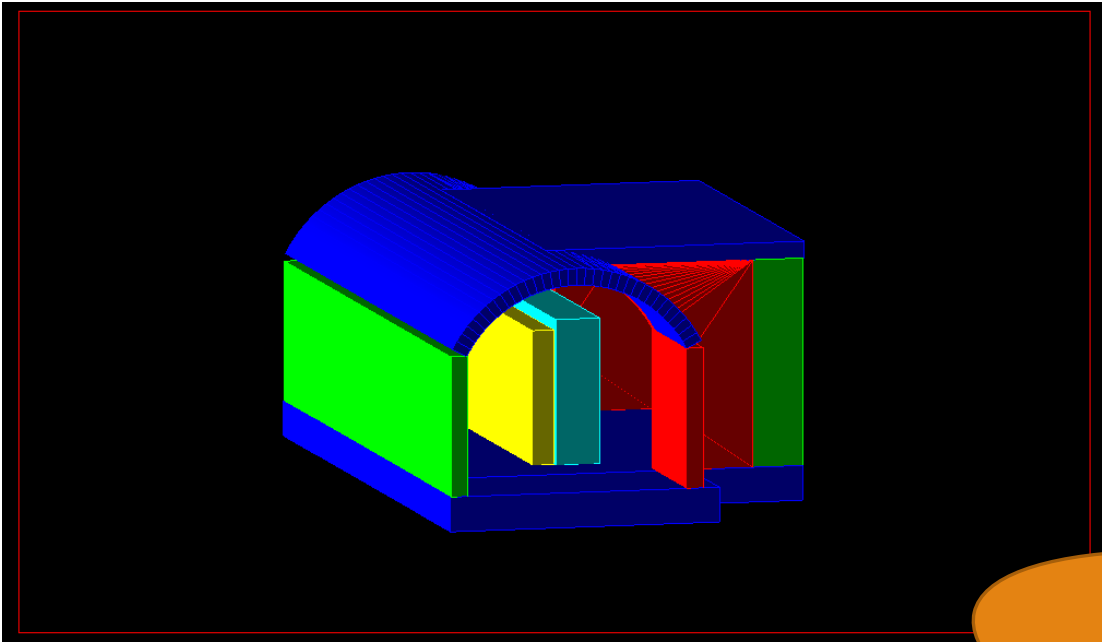


.stp file of
EAR2

Fluka
model



Geant4 geometry



Ready to run!

Experimental test

Full activation
simulation with
 ^{197}Au samples

Experimental
measurement at
NEAR station

Measurement of
the obtained SACS
to validate the
simulation

GOLDEN
CROSS-SECTION

^{197}Au MACS:

8 KeV: 1455 ± 19 mb

30 keV: 612 ± 6 mb

<https://exp-astro.de/kadonis1.0/selementquery.php?isotope=197Au>

Thanks for your attention!
