



SPL

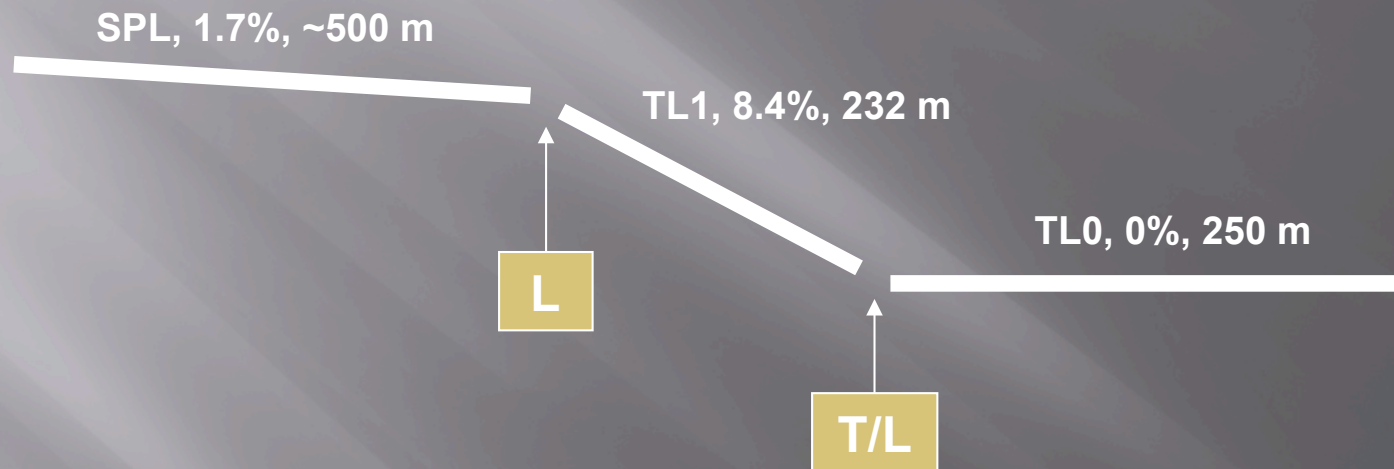
Collimation and radiation protection studies

Marcin Staszczak

The Andrzej Soltan Institute for Nuclear Studies

Department of Accelerator Physics and Technology

1. High power collimators in transfer line between SPL and the injection into PS2

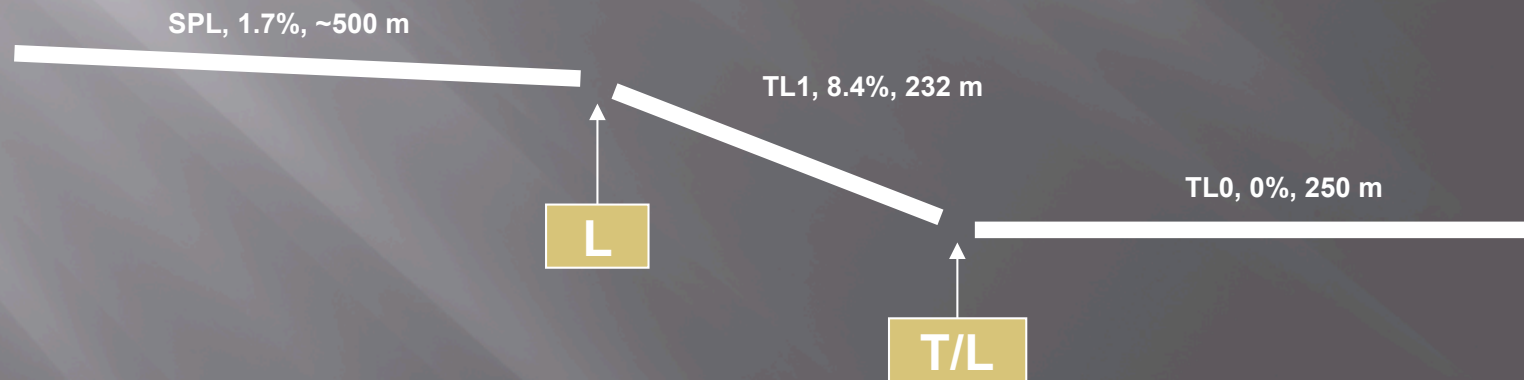


Possible collimator locations

T – transverse, L - longitudinal

The output of the studies will be:

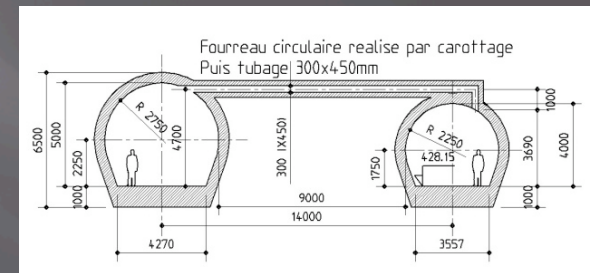
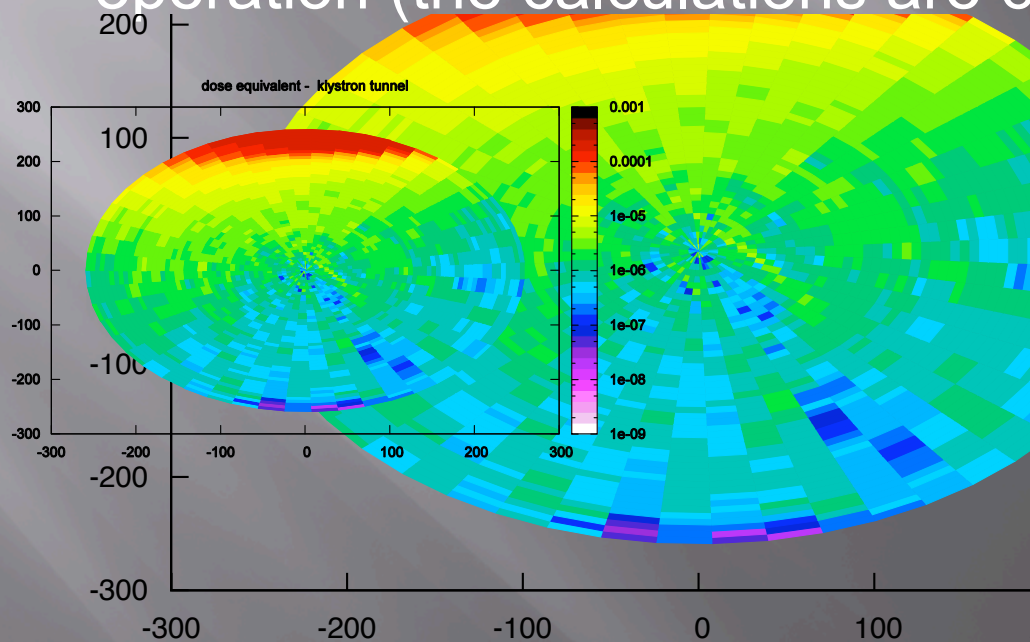
- collimators geometry,
- collimation material,
- necessity to cool various levels of intercepted power (100 – 1000 W),
- activation of the collimators and other elements
- Shielding requirements



2. Radiation protection studies

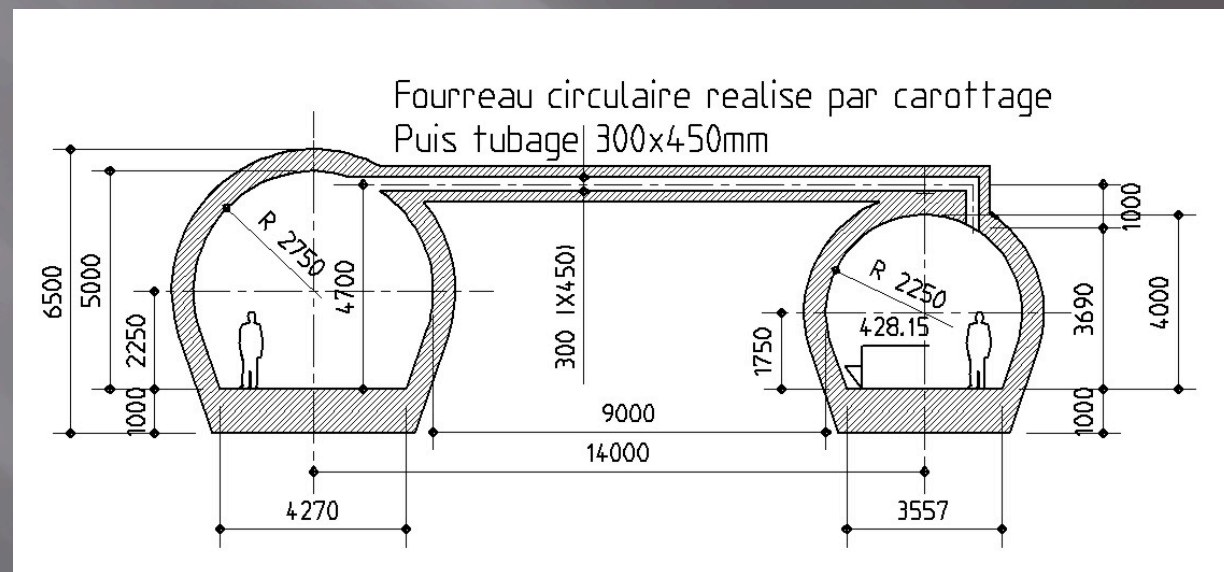
The output of the studies will be:

- design of waveguide ducts connecting the klystron tunnel with the accelerator tunnel, to ensure safe hands-on maintenance in the klystron tunnel during operation (the calculations are currently performed);



preliminary calculations
of the dose equivalent
in the klystron tunnel

- activation of air in the tunnels during operation;
- activation of machine parts due to particle loss of cryo-modules;
- cool-down time after operation;
- radiation level in neighbouring tunnels, when taking into account collimator locations;
- shielding requirements;
- ...



Next steps:

- Comparission of the different geometries of waveguide ducts and accurate dose calculations in the klystron tunnel;
- Studies of additional shielding at the entrance and exit of the waveguide ducts;
- Collimation studies.