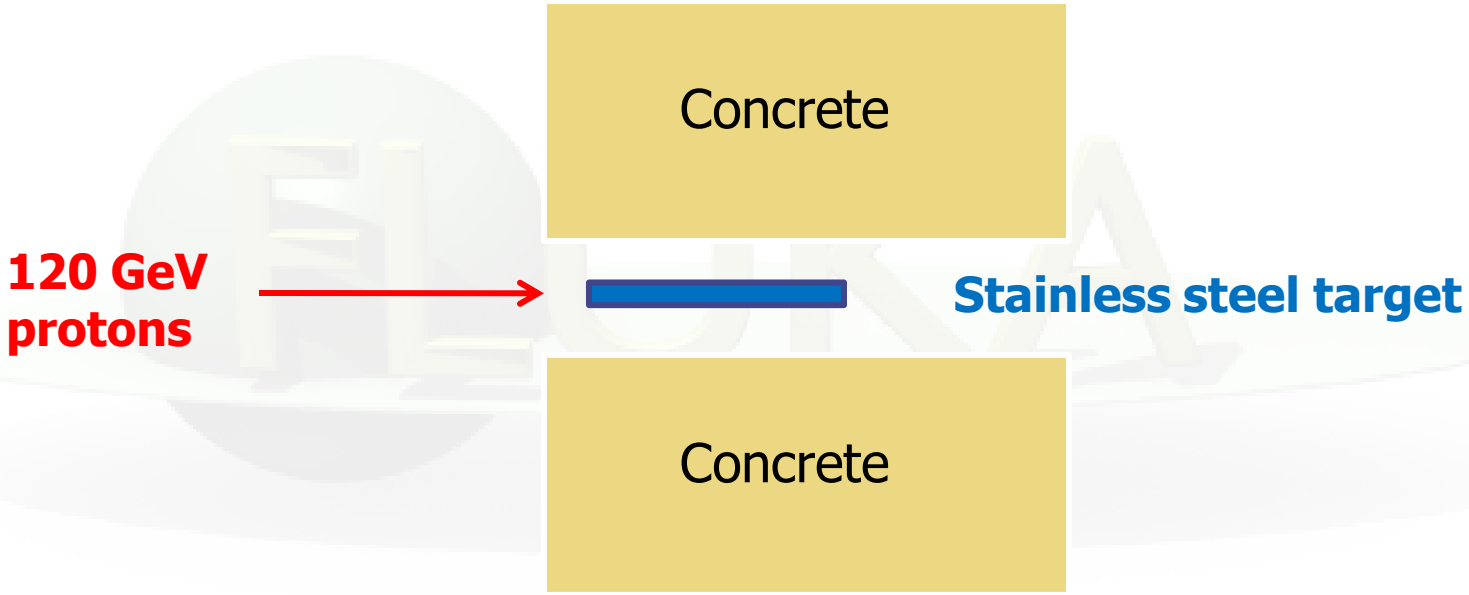
FLUKA example

Activation Calculations

Geometry



Irradiation profile

electromagnetic cascade only
for residual radiation

```
*  ..+....1....+....2....+....3....+....4....+....5....+....6....+....7..
RADDECAY         1.0          1.0          3.0                99999
*             1 week                    1 week                1 year
IRRPROFI     604800.0       1.0E7     604800.0          0.0 31536000.      1.0E7
```

negative decay time
to go back in irradiation profile

```
*                1 hour       1day      1year
*         after     1st        2nd       2nd  irradiation
DCYTIMES -32137200.    86400.0 31536000.
```

Material assignments

1) Target only (shielding set to vacuum)

```
ASSIGNMA     BLCKHOLE    EXTVOID
ASSIGNMA       VACUUM    VACTRGT
ASSIGNMA       SS316L     TARGET
ASSIGNMA     CONCRETE   SHIELDIN                                        VACUUM
*  ..+....1....+....2....+....3....+....4....+....5....+....6....+....7..
```

2) Shielding only (target set to vacuum)

```
ASSIGNMA     BLCKHOLE    EXTVOID
ASSIGNMA       VACUUM    VACTRGT
ASSIGNMA       SS316L     TARGET                                        VACUUM
ASSIGNMA     CONCRETE   SHIELDIN
*  ..+....1....+....2....+....3....+....4....+....5....+....6....+....7..
```

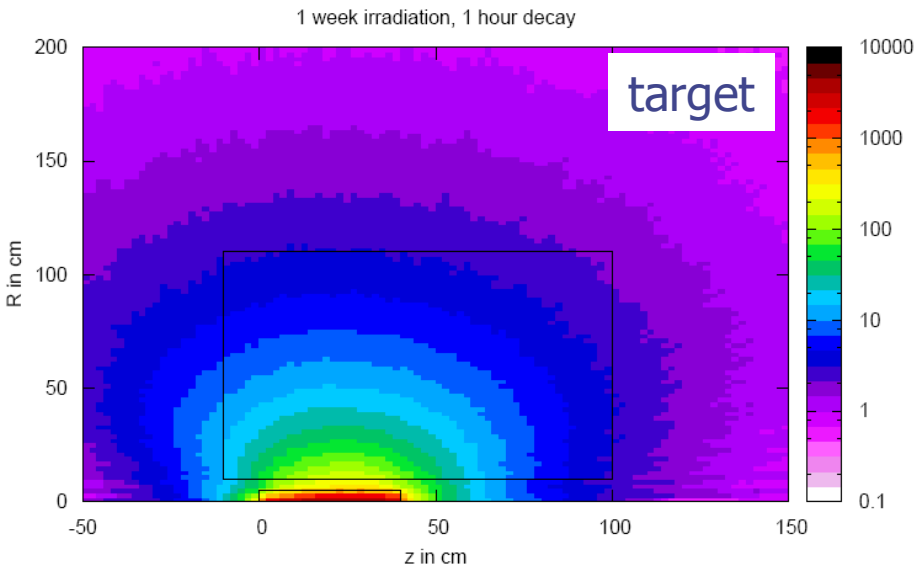
3) Target and shielding

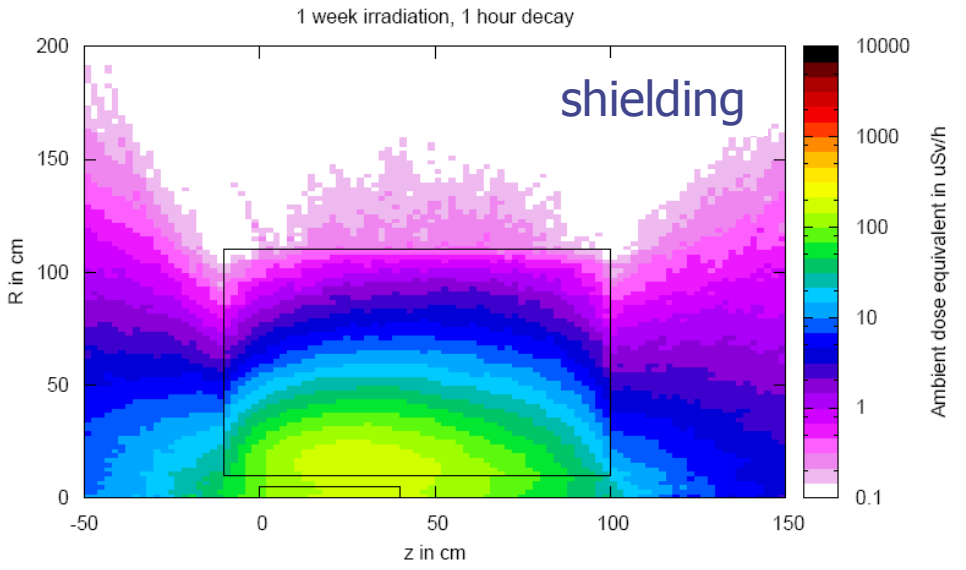
```
ASSIGNMA     BLCKHOLE    EXTVOID
ASSIGNMA       VACUUM    VACTRGT
ASSIGNMA       SS316L     TARGET
ASSIGNMA     CONCRETE   SHIELDIN
*  ..+....1....+....2....+....3....+....4....+....5....+....6....+....7..
```

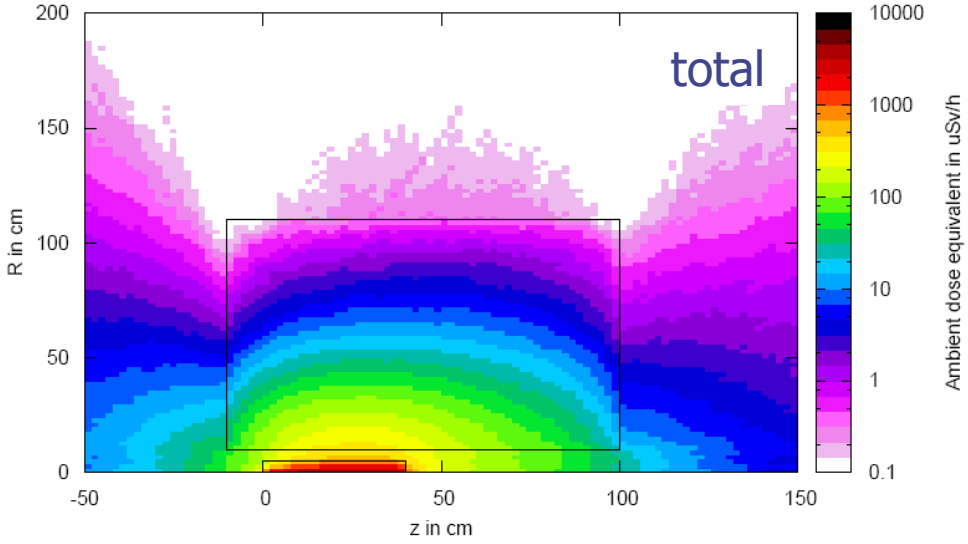
Scoring

```
AUXSCORE       USRBIN                          DEa1h     DEb1y          AMB74
DCYSCORE          1.0                          DEa1h     DEa1h          USRBIN
USRBIN           11.0   DOSE-EQ      -40.0     200.0       0.0  150.0DEa1h
USRBIN            0.0        0.0     -50.0     100.0       1.0  100.0&
DCYSCORE          2.0                          DEb1d     DEb1d          USRBIN
USRBIN           11.0   DOSE-EQ      -40.0     200.0       0.0  150.0DEb1d
USRBIN            0.0        0.0     -50.0     100.0       1.0  100.0&
DCYSCORE          3.0                          DEb1y     DEb1y          USRBIN
USRBIN           11.0   DOSE-EQ      -40.0     200.0       0.0  150.0DEb1y
USRBIN            0.0        0.0     -50.0     100.0       1.0  100.0&
```

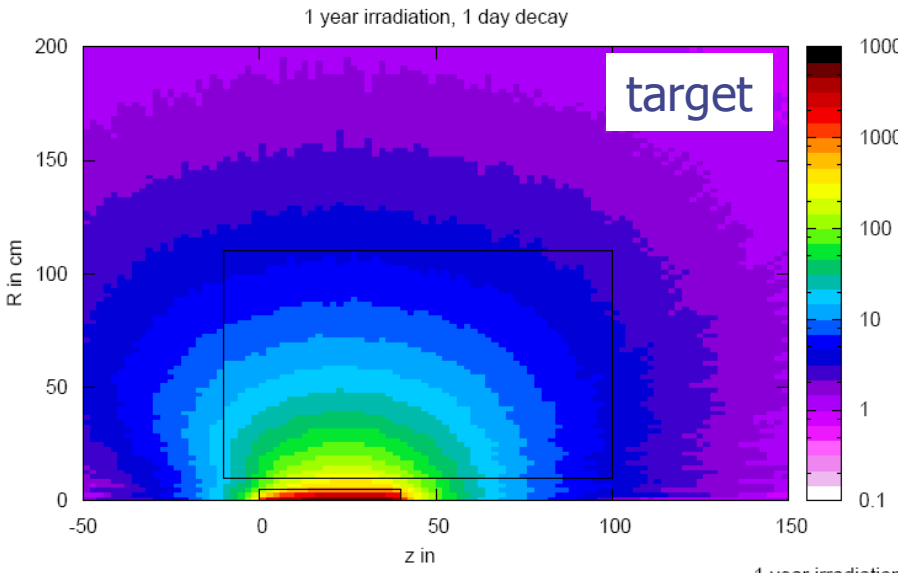
One week irradiation, one hour decay

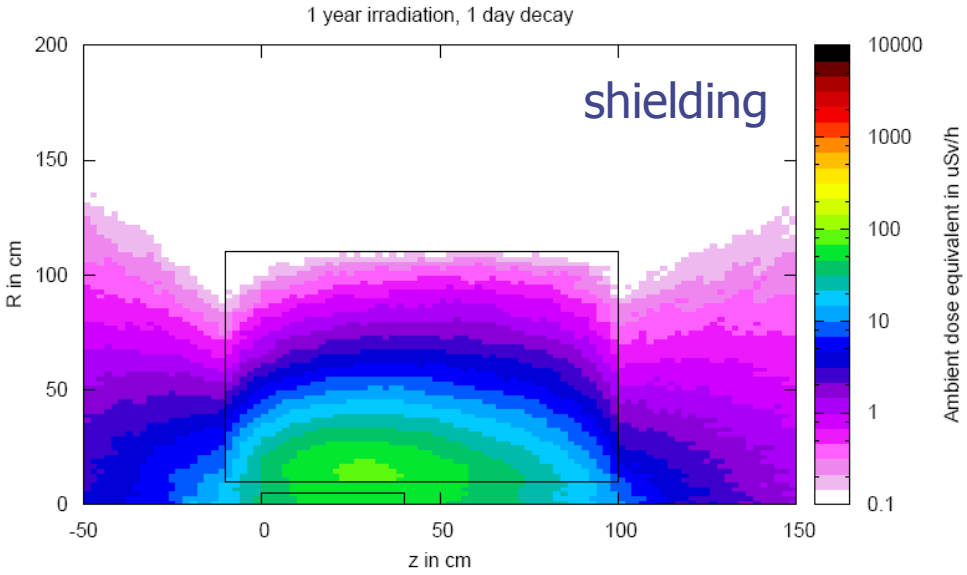


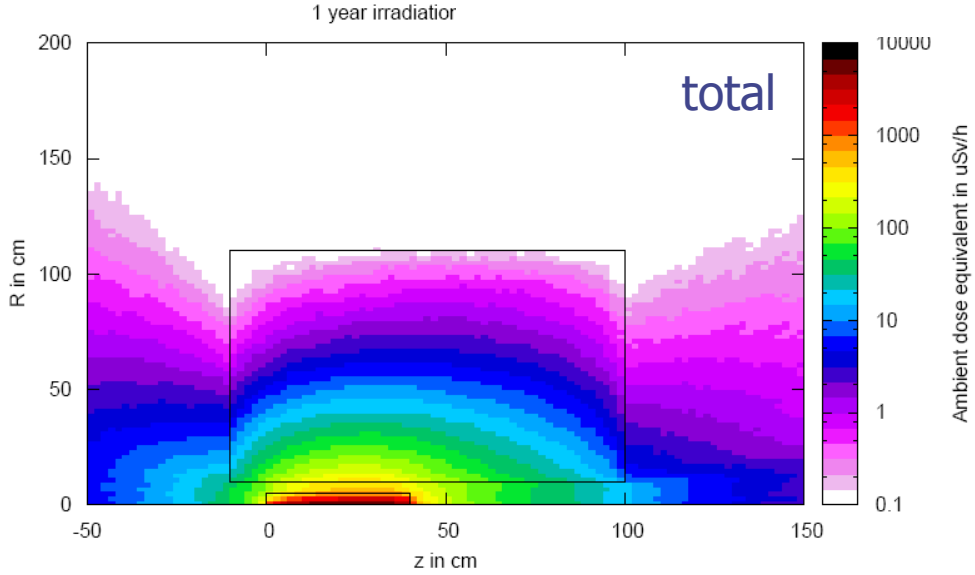




One year irradiation, one day decay







One year irradiation, one year decay