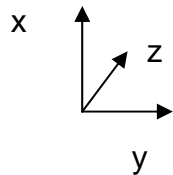
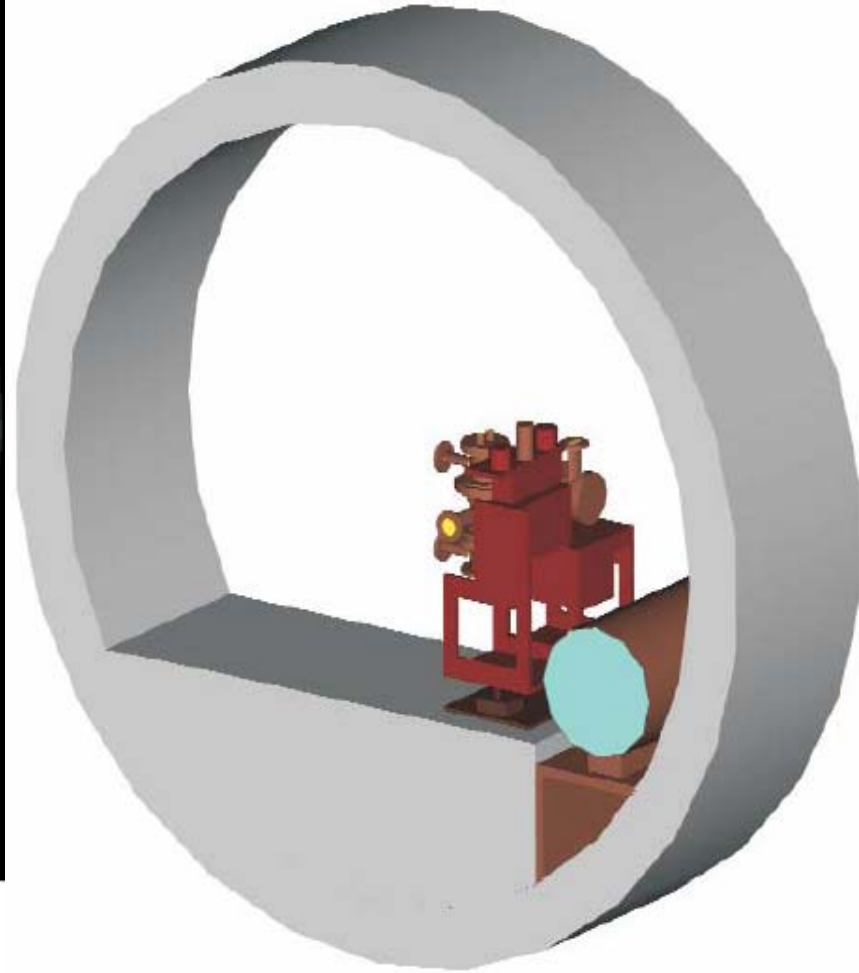
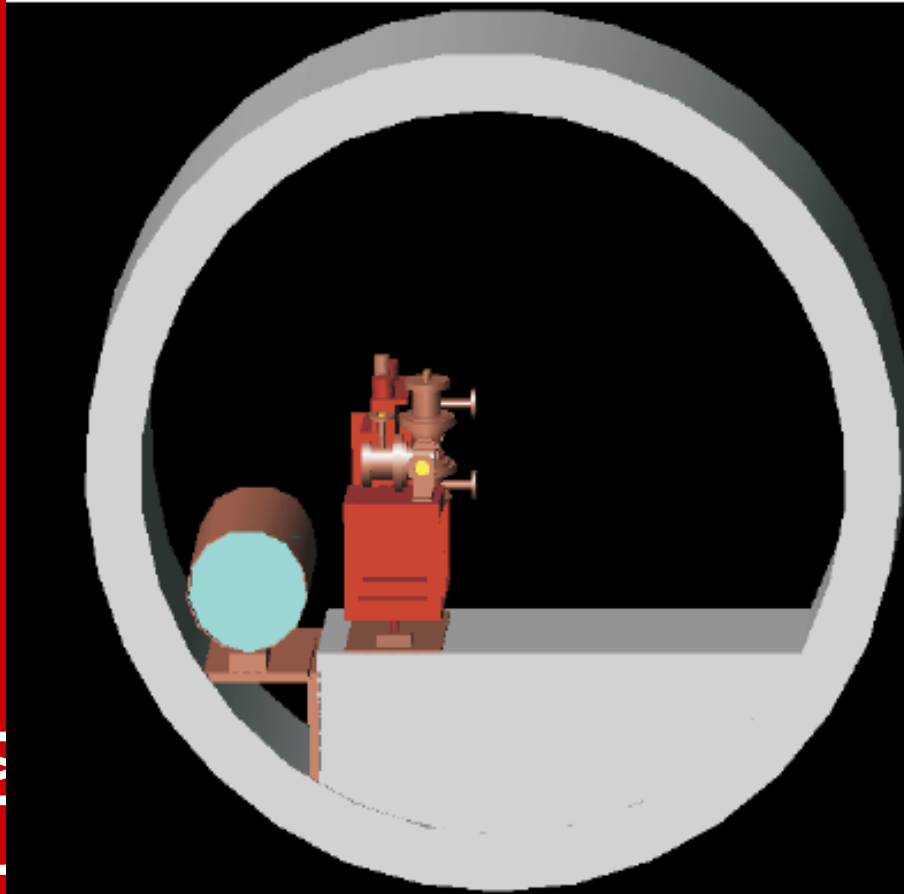


# FLUKA dose calculations and Nuclear Waste Zoning for TOTEM

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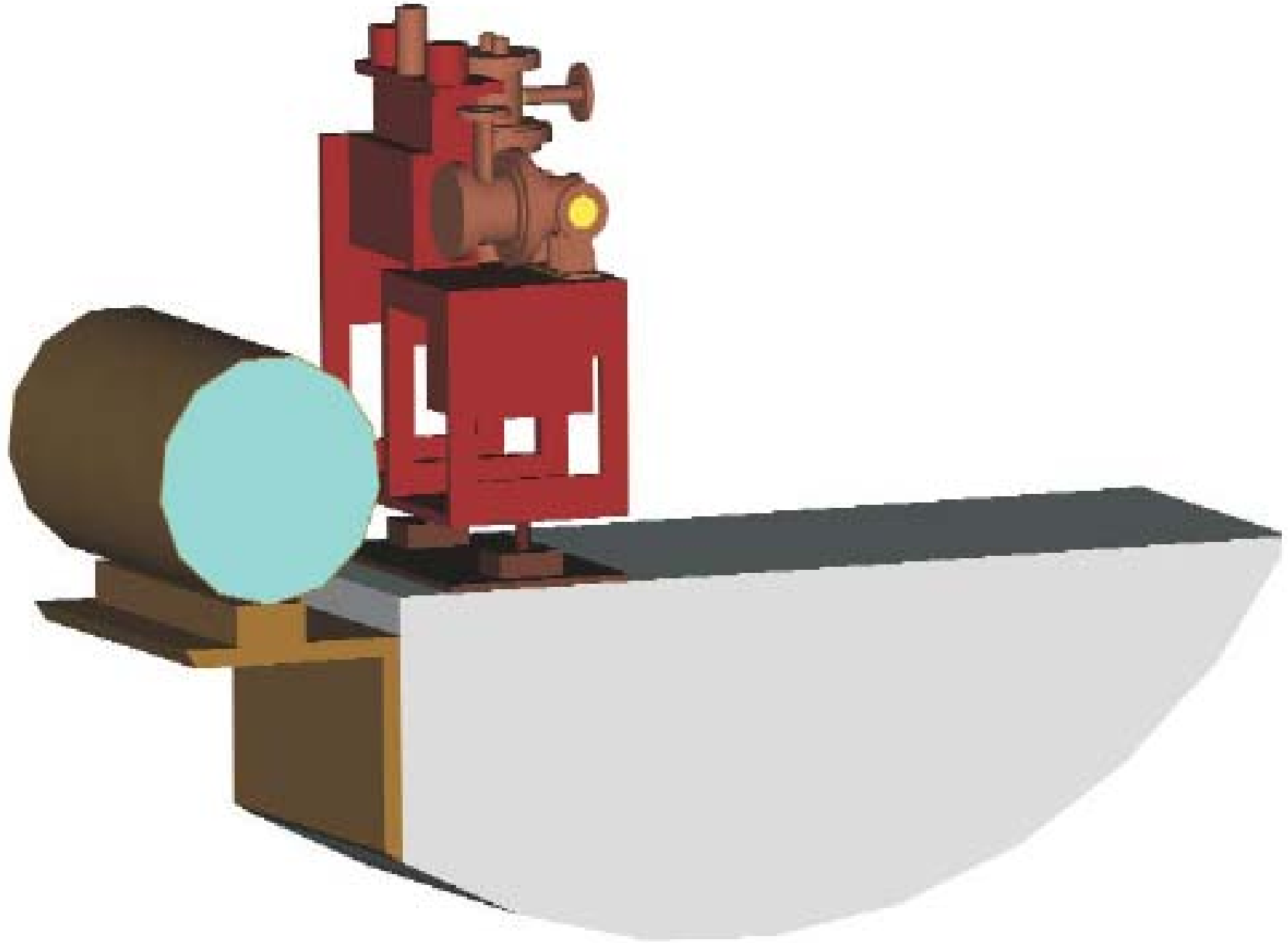
Evangelia Dimovasili  
TS/LEA

## The FLUKA geometry of the RP in the tunnel



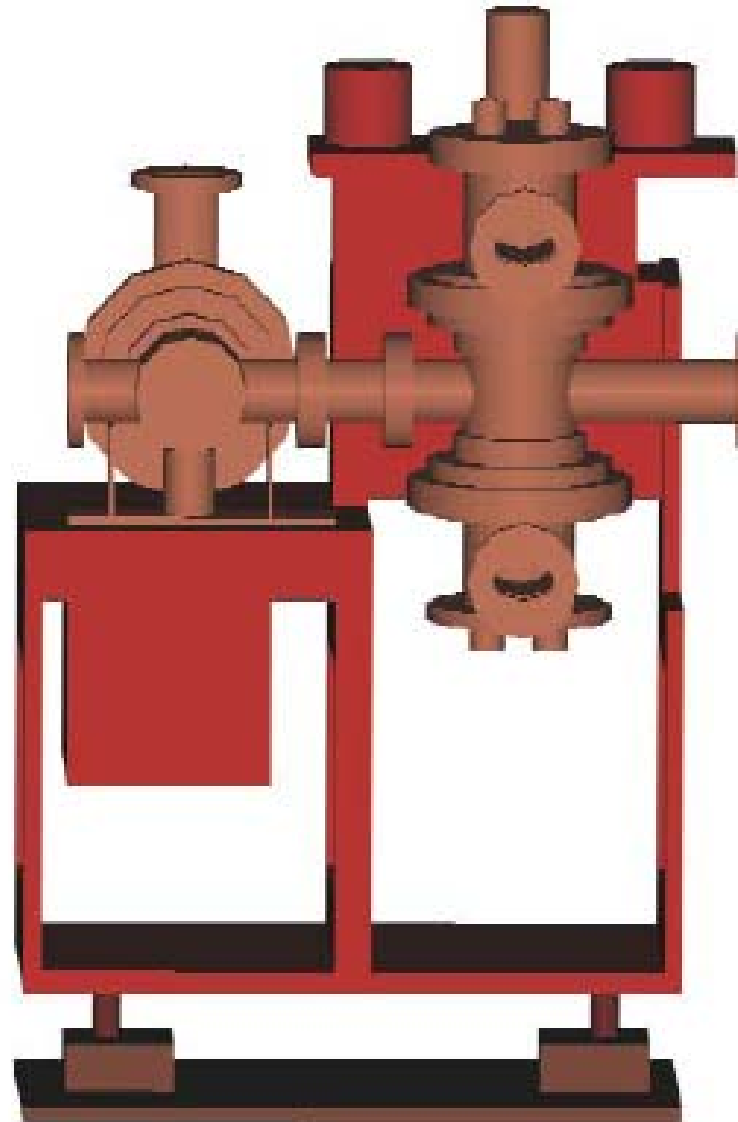
30 August 2006

# TOTEM



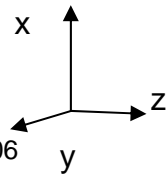
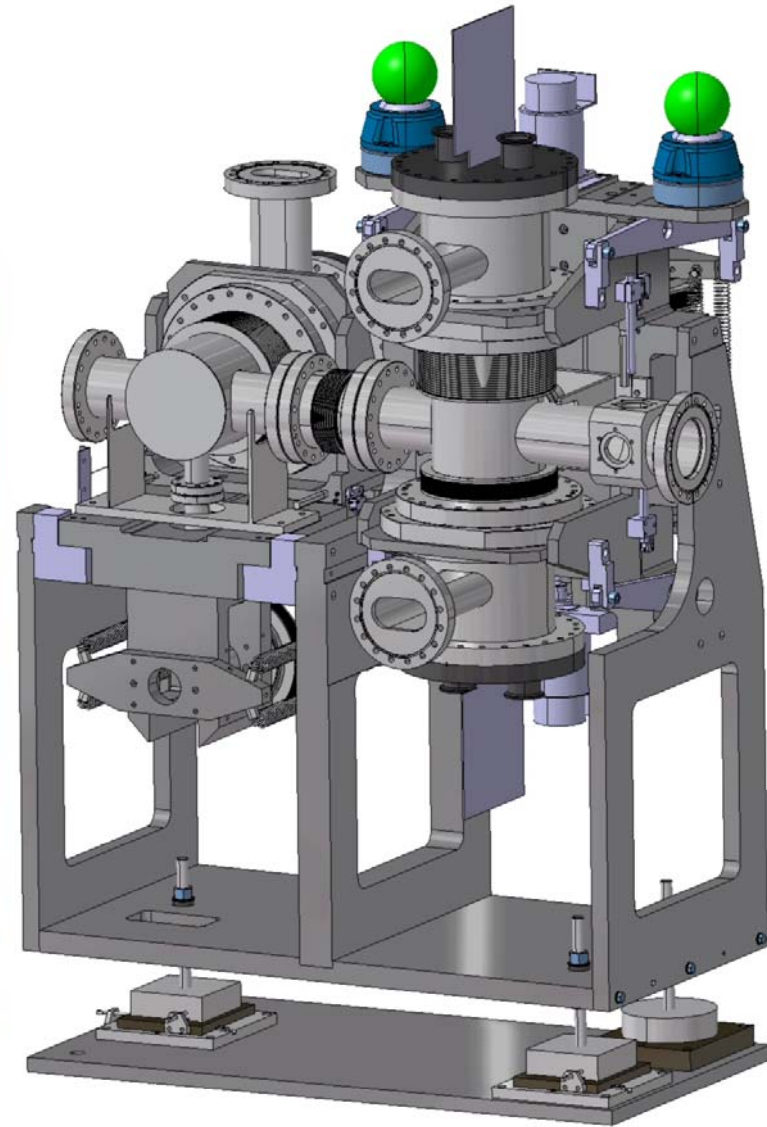
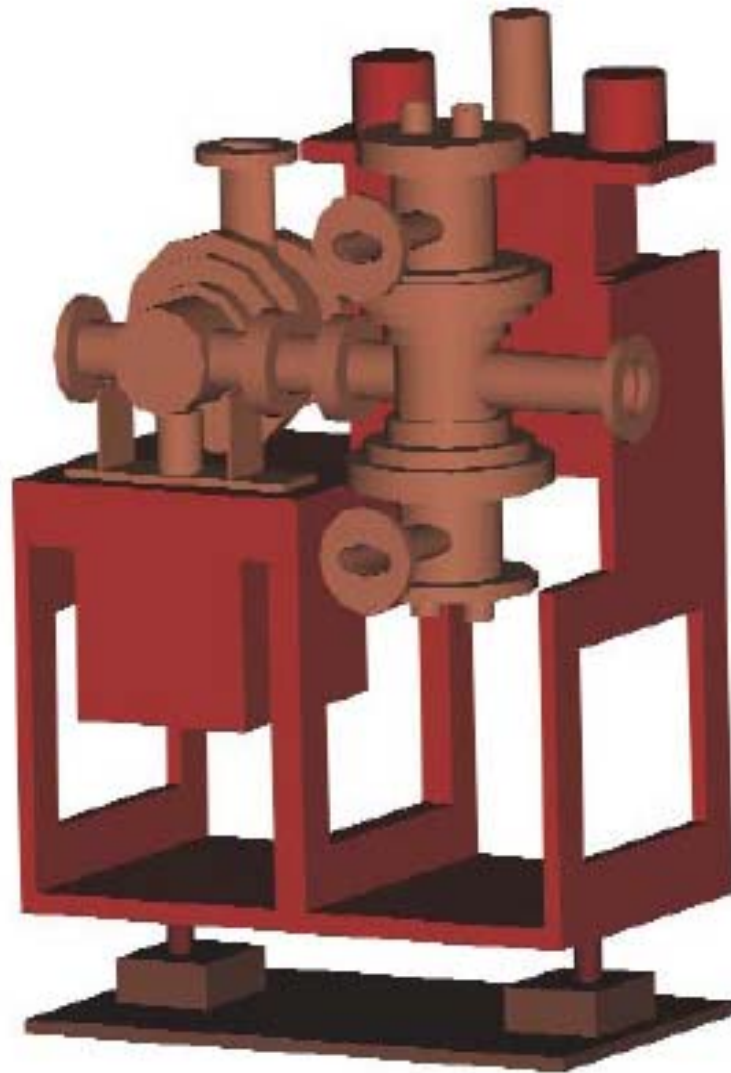
30 August 2006

## The FLUKA geometry of the Roman Pot



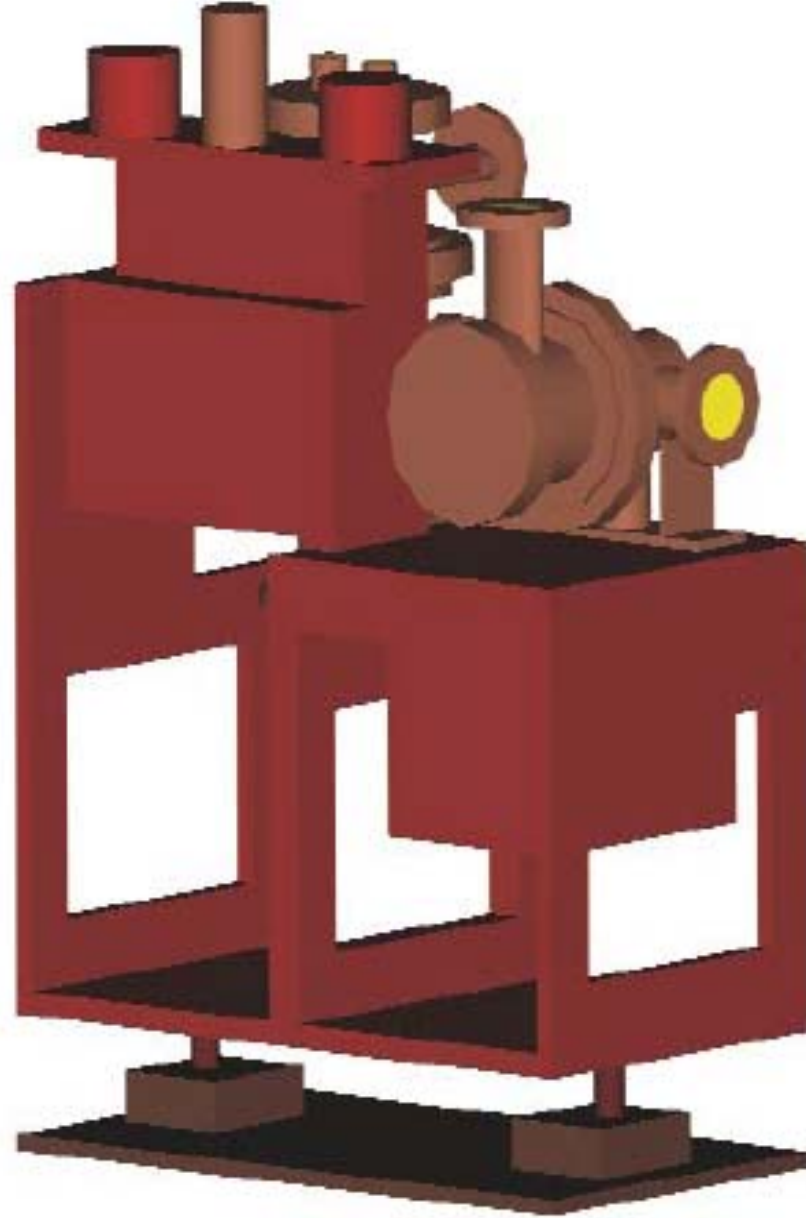
30 August 2006

# TOTEM



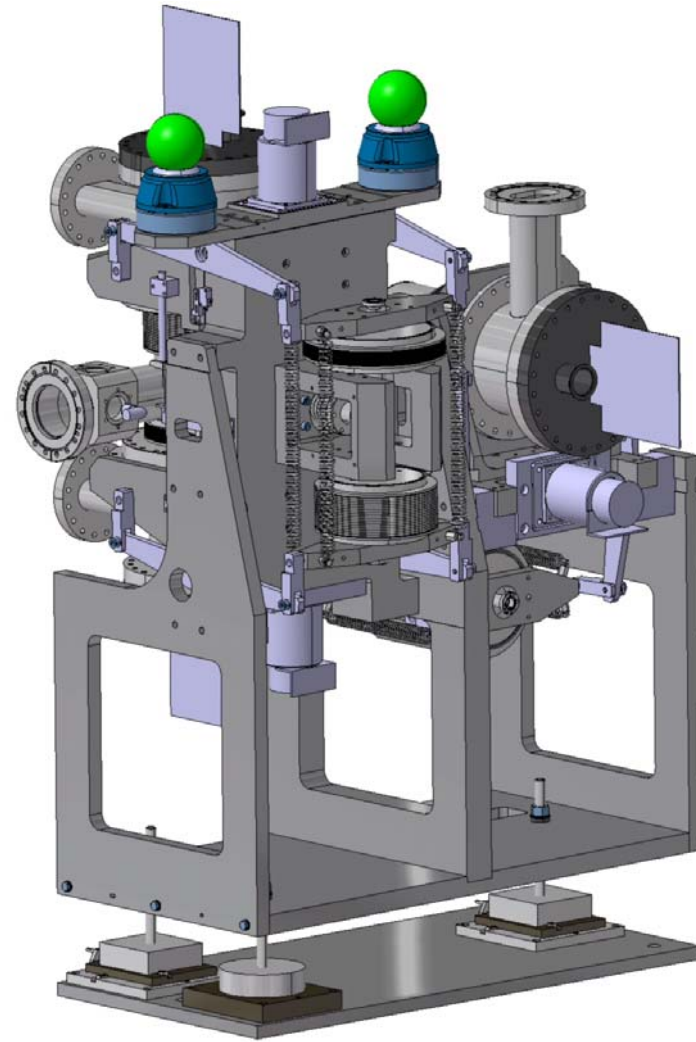
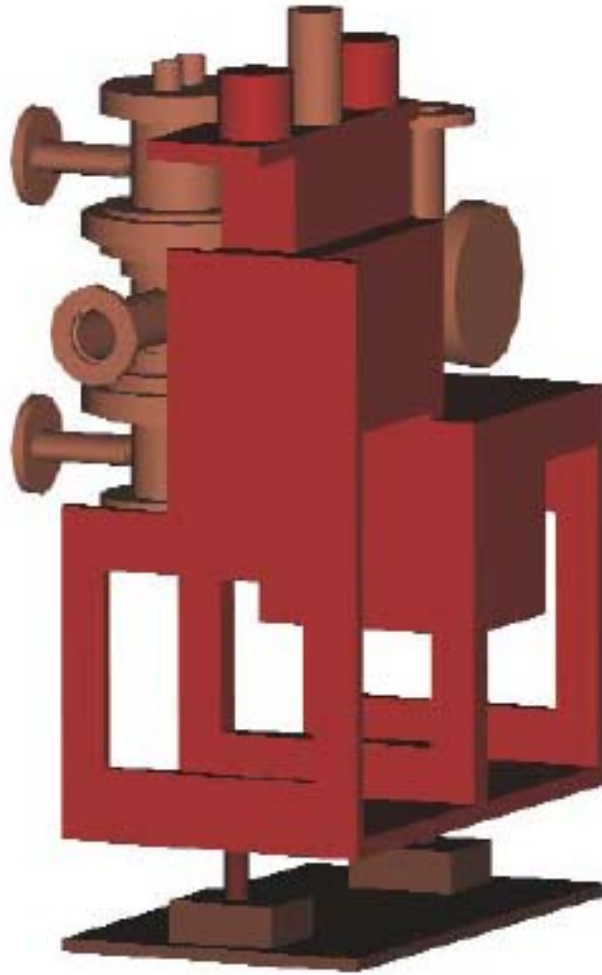
30 August 2006

# TOTEM



30 August 2006

# TOTEM



30 August 2006

## Calculations that need to be done

for TOTEM purposes

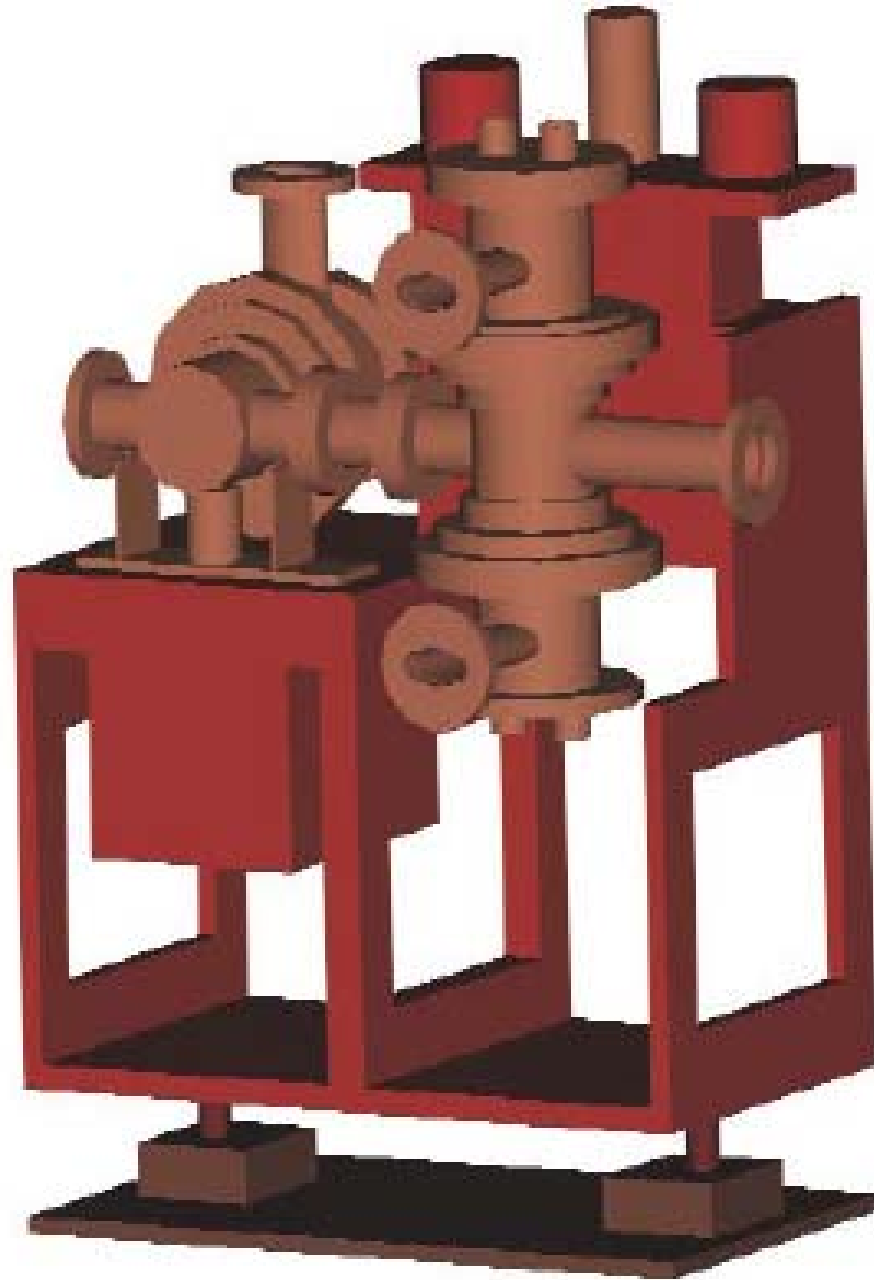
for LHC

Source from N. Mokhov (May 2006 for 2 cases: TCL open, TCL closed) at 214 m

- Prompt doses at detectors, flanges, motors, electronics etc
- Remnant contact doses at same locations (induced radioactivity)
- Nuclear waste classification (based on how specific activity of radio- nuclides in the RP compares with the exemption values given by Swiss & French authorities).
- If Reference zoning calculation ( $\mathcal{R}$ )  $> 1 \rightarrow$  nuclear waste
- Calculation of radionuclide inventory, specific activity, for **different irradiation scenarios** (e.g. 24 hours per day, 180 days, 10 years).
- $\mathcal{R}$  for different cooling times (e.g. 1 day, 100 days, 1 year)



# TOTEM



30 August 2006