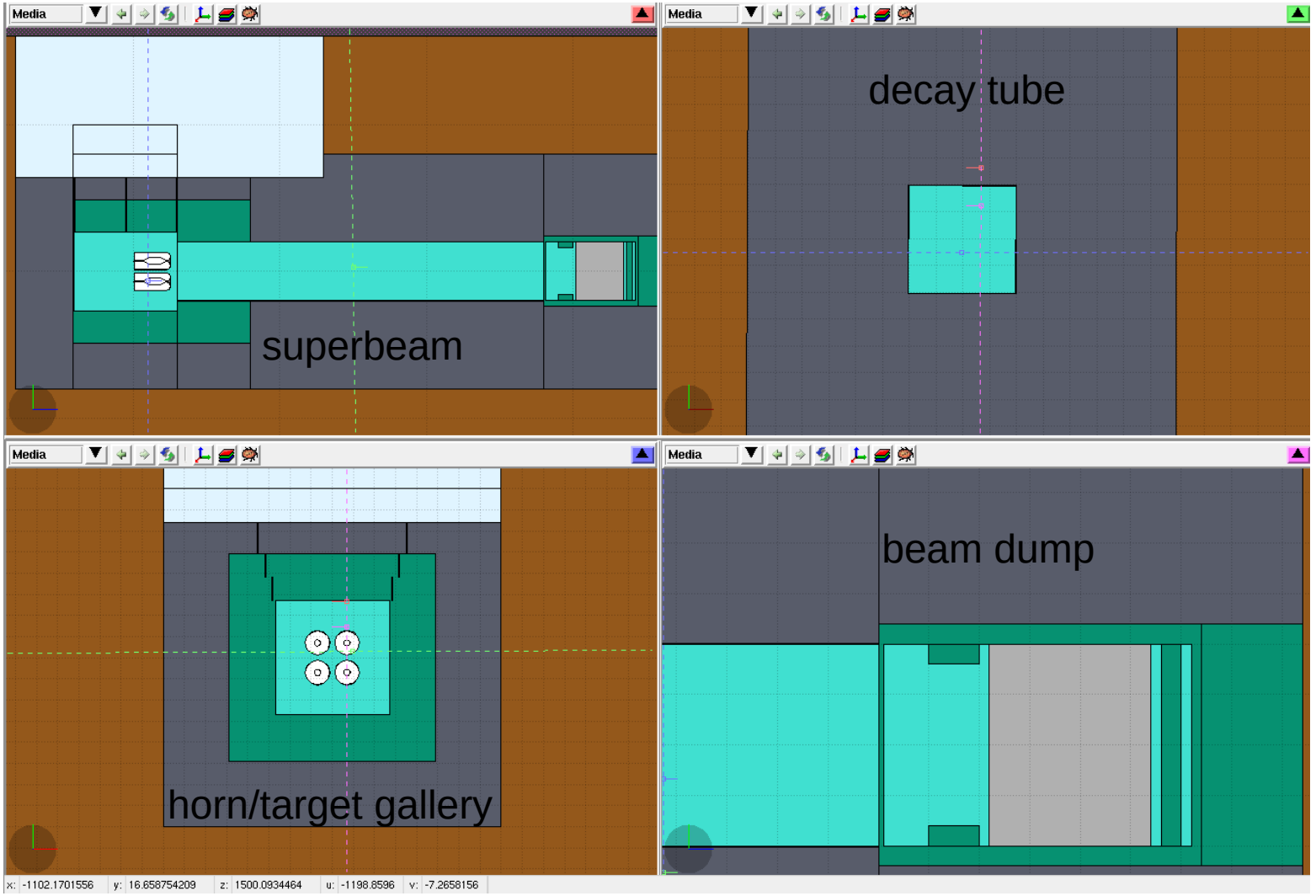
Update on Energy Deposition for the 4-horn system, 4 MW

(v-beam, pi+ focusing)

Nikos for IPHC EURONU group

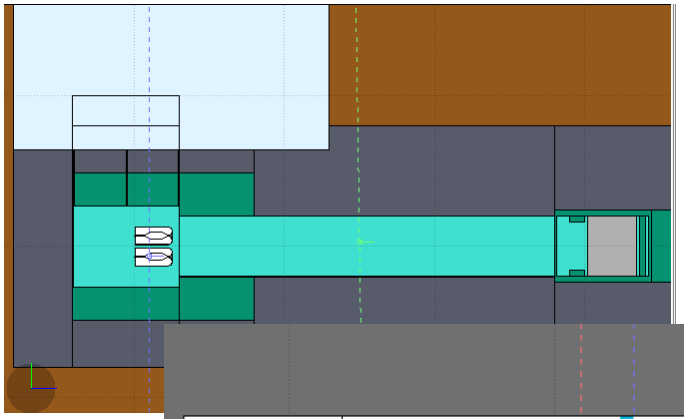
simulation layout - fluka, flair gui/analysis

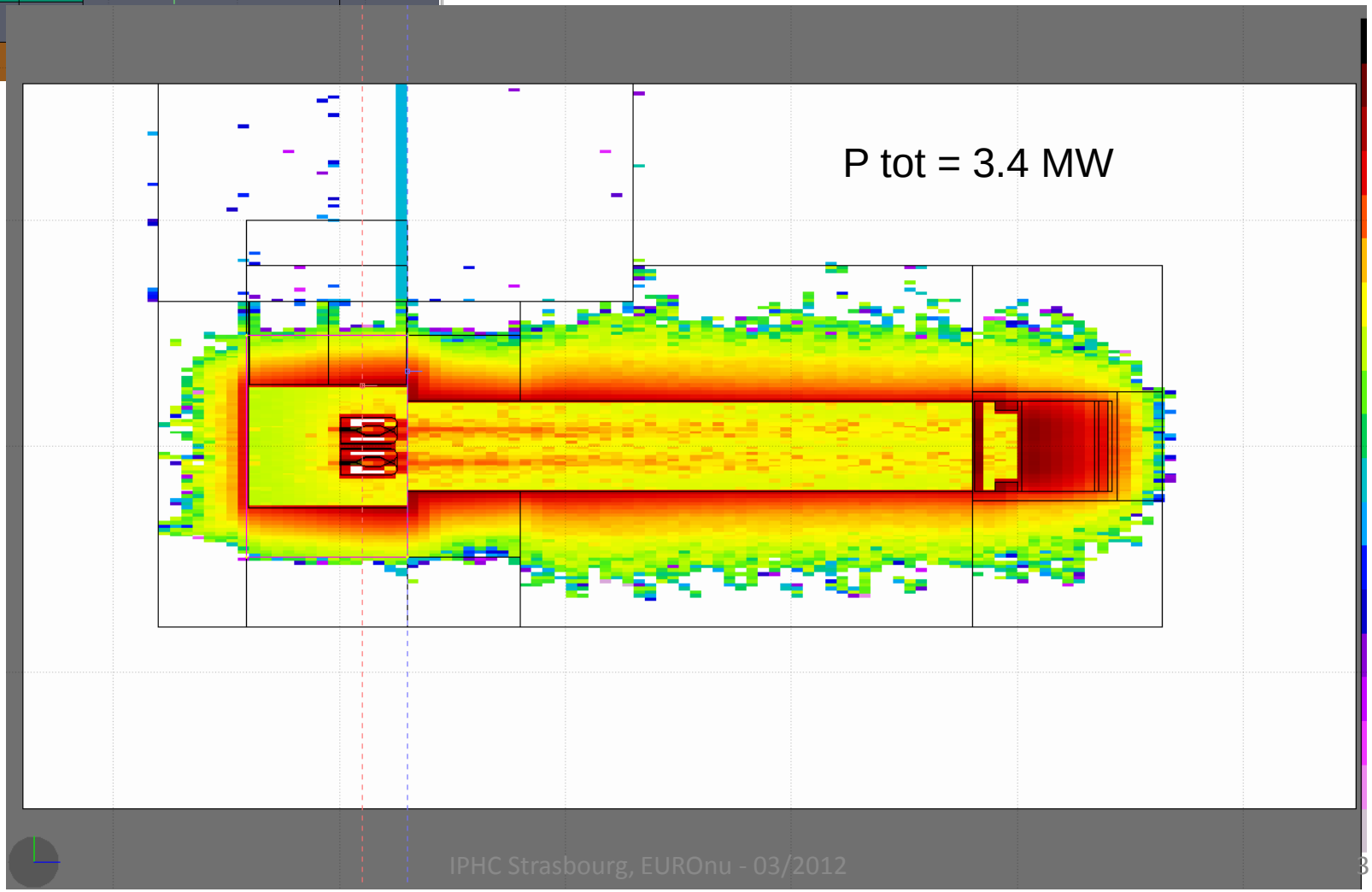
iron, concrete, molasse, He



total power

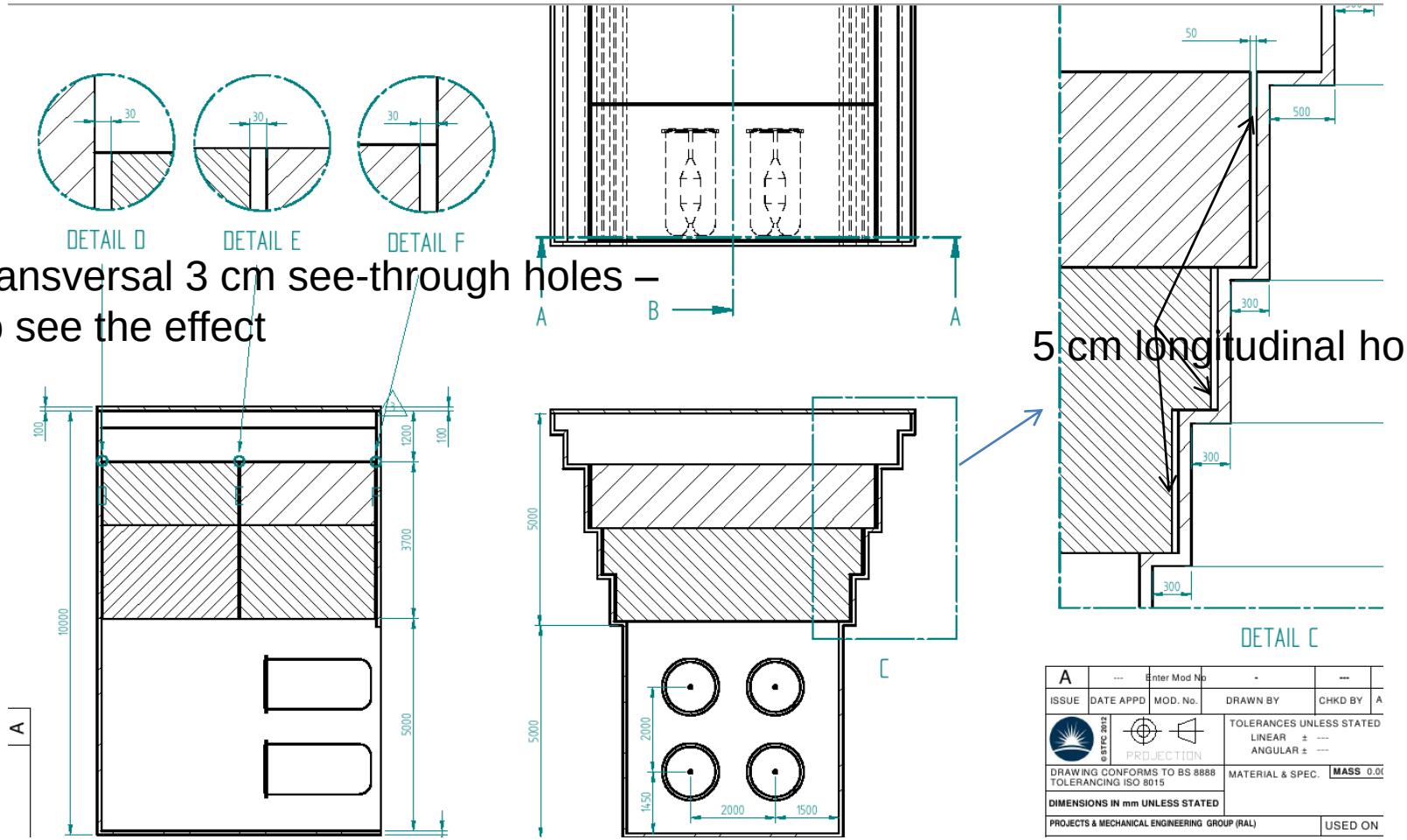
iron, concrete, molasse, He





horn/target gallery

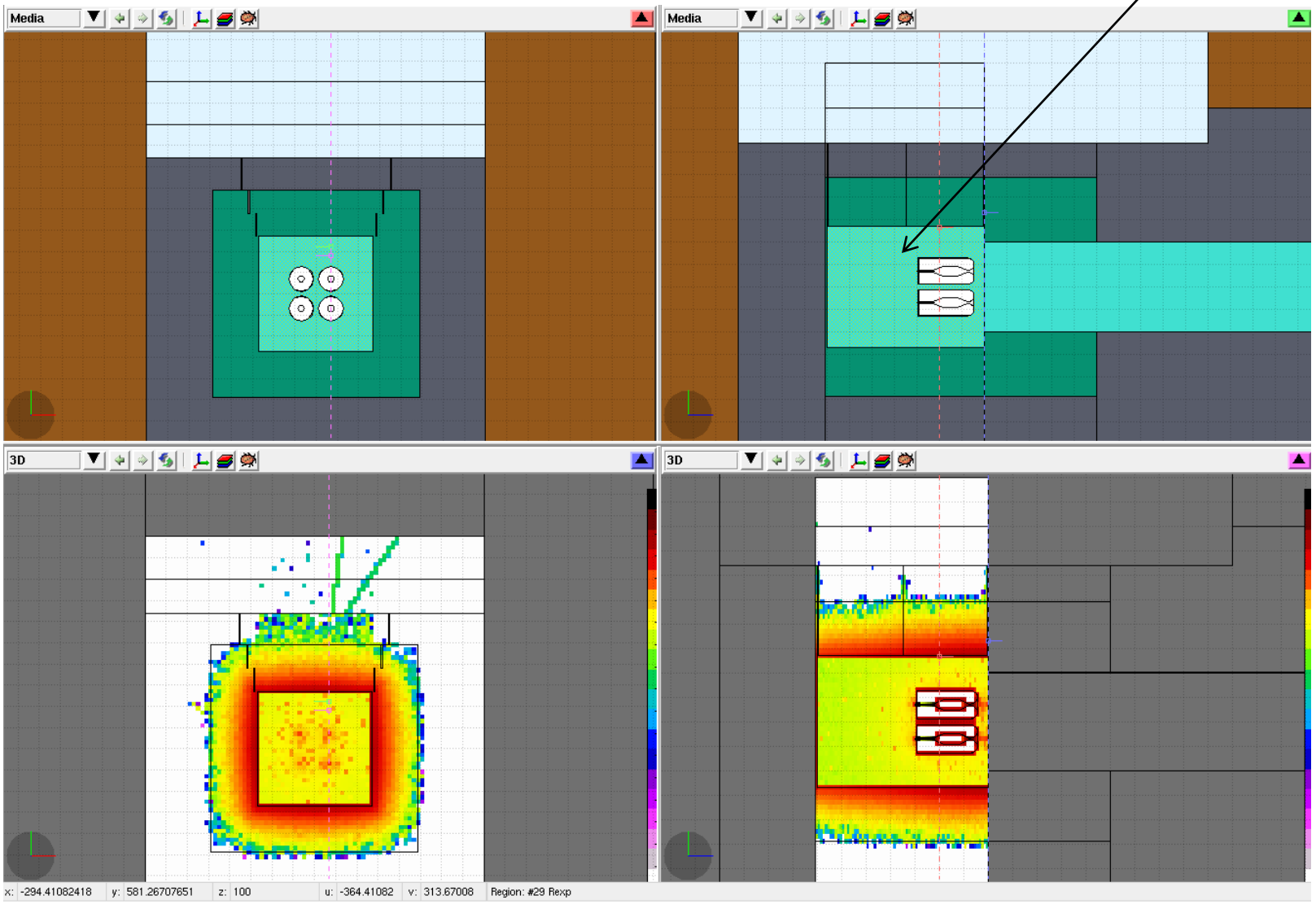
similar to Dan's geometry for horn/target gallery – including holes:



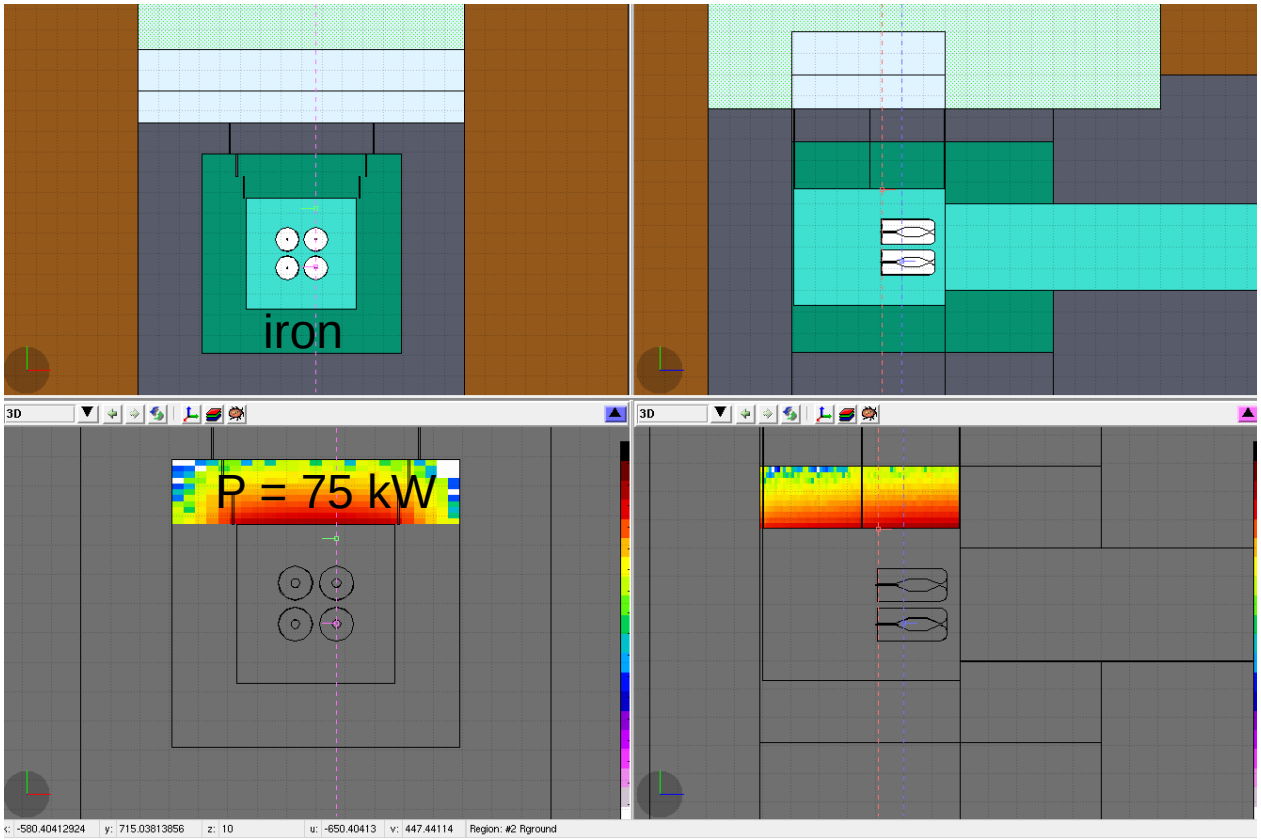
horn/target gallery

iron, concrete, molasse, He

L = 7.1 m
H, W = 5.4 m

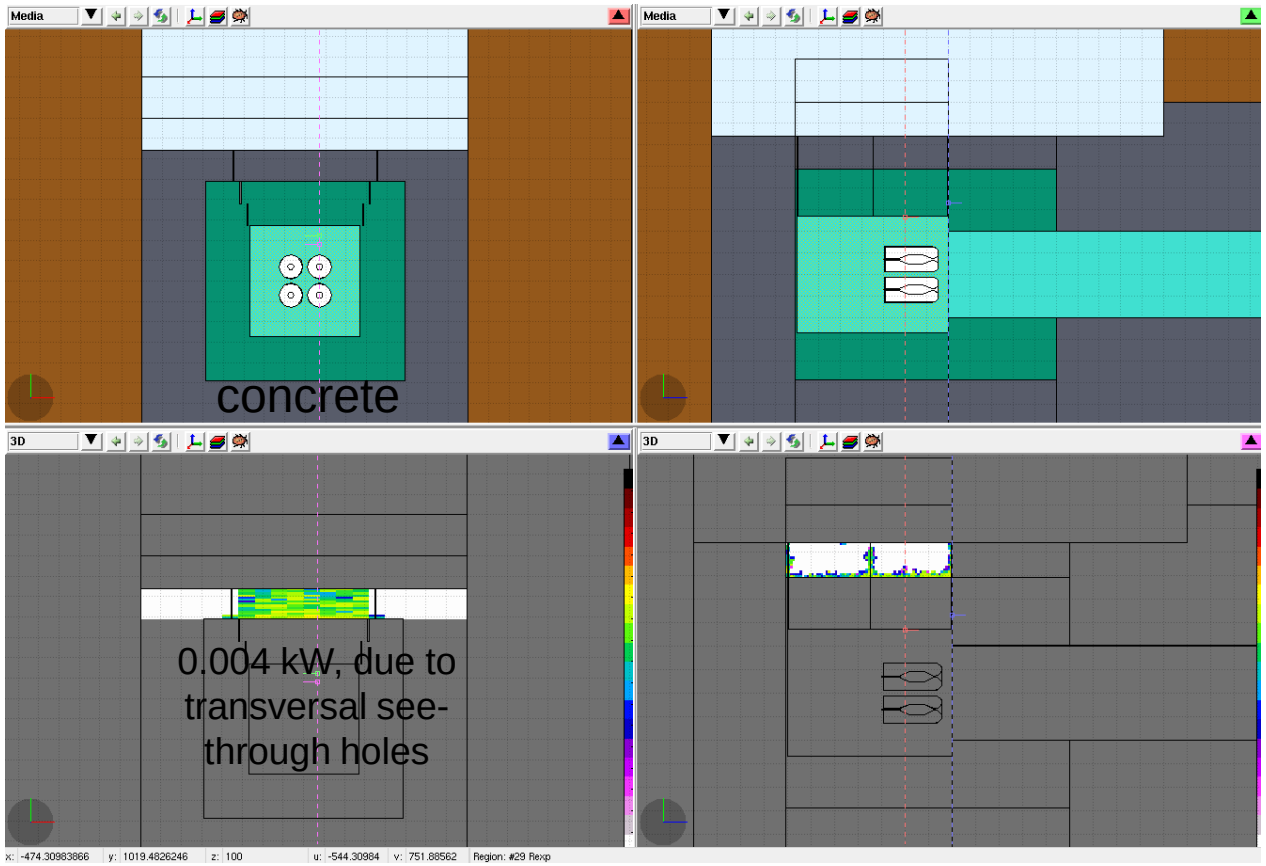


horn/target gallery: iron



horn area length = 7.1 m	iron t = 2.2 m x = -4.9-> 4.9 m	iron-above horns
Power	303 kW	75 kW

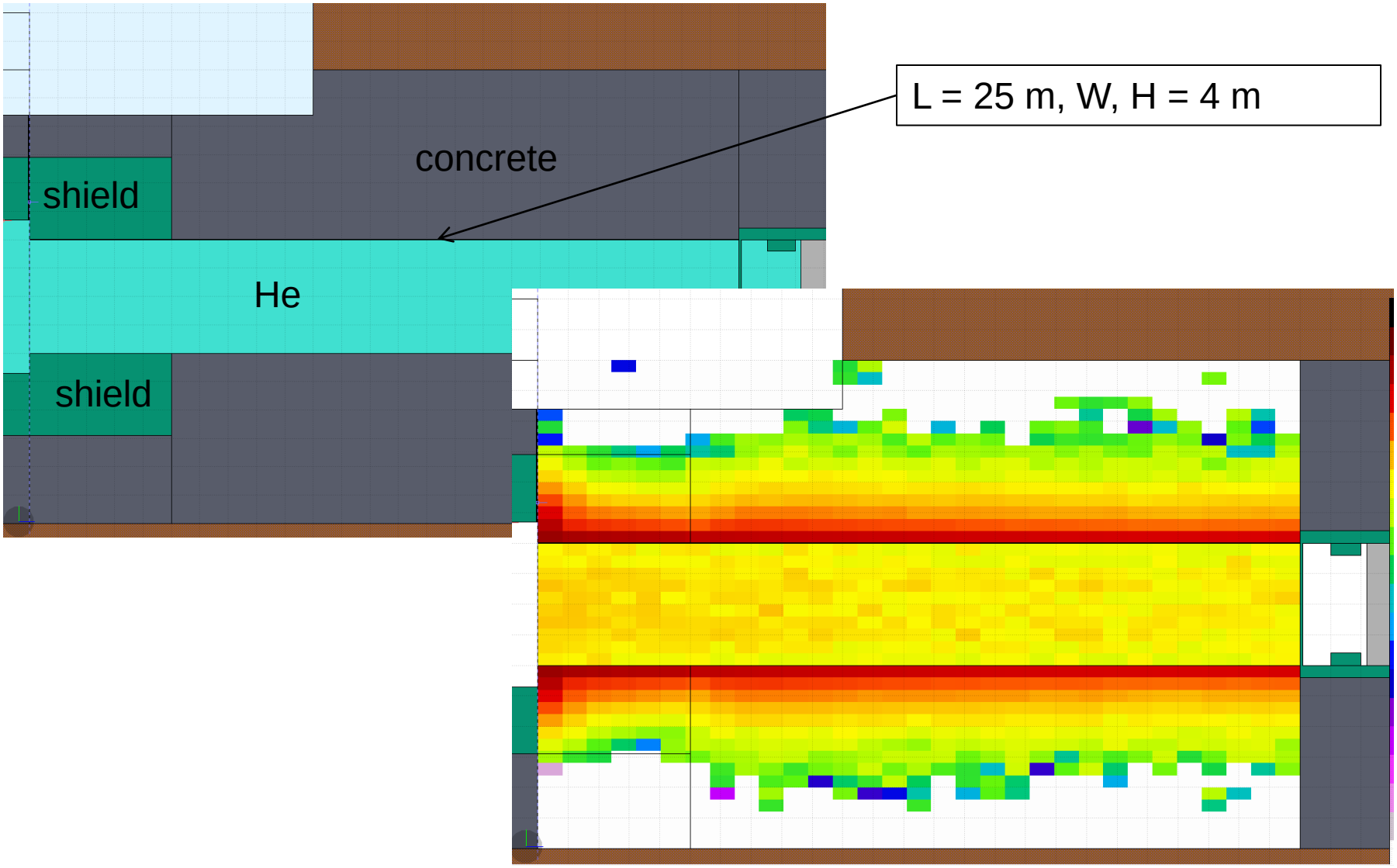
horn/target gallery: concrete



area length = 7.1 m	concrete t = 3.1 m x = -8 -> 8 m	concrete-above horns t = 1.5 m
Power	0.01 kW	0.004 kW

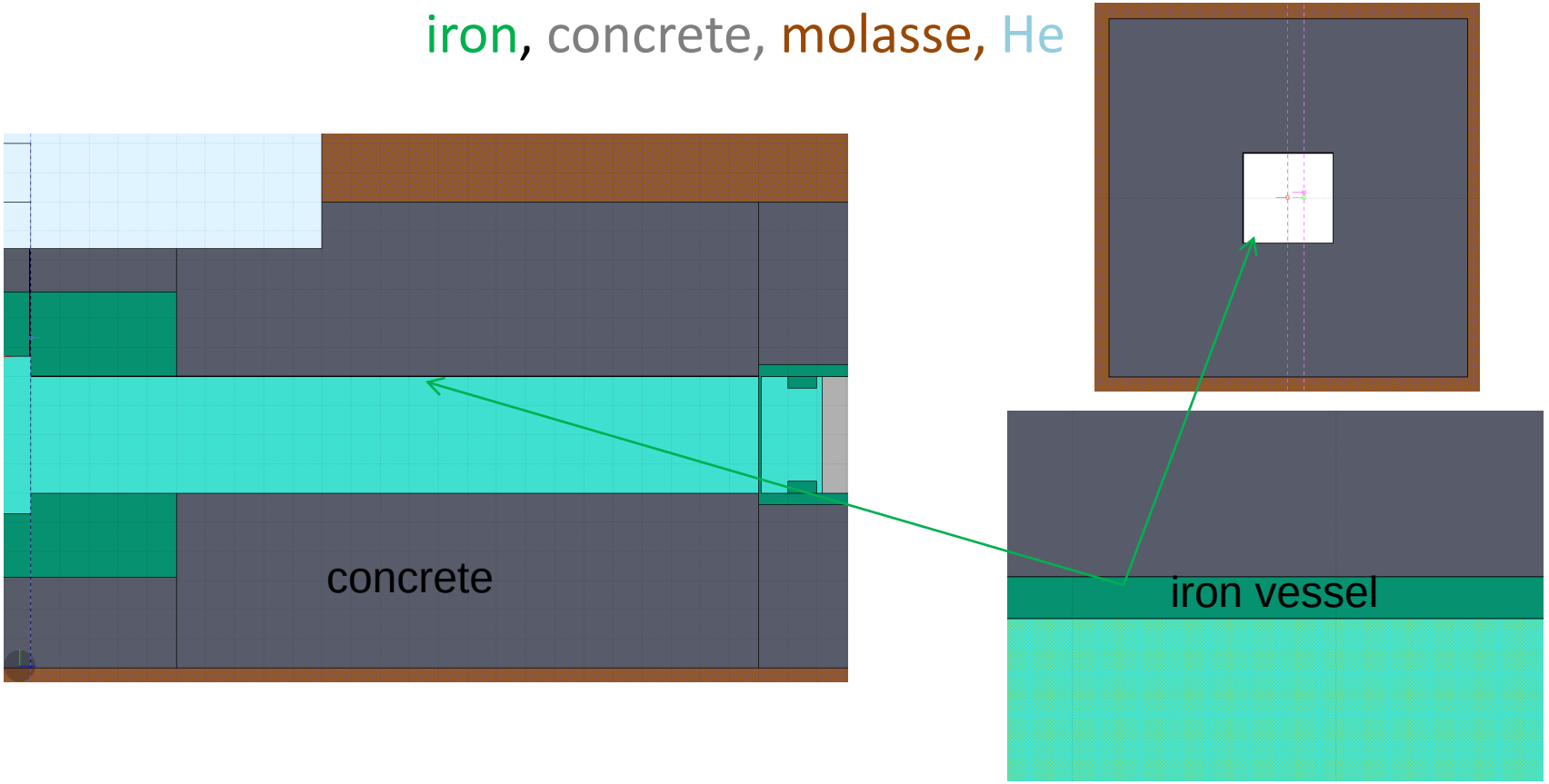
decay tunnel and surrounding area

iron, concrete, molasse, He



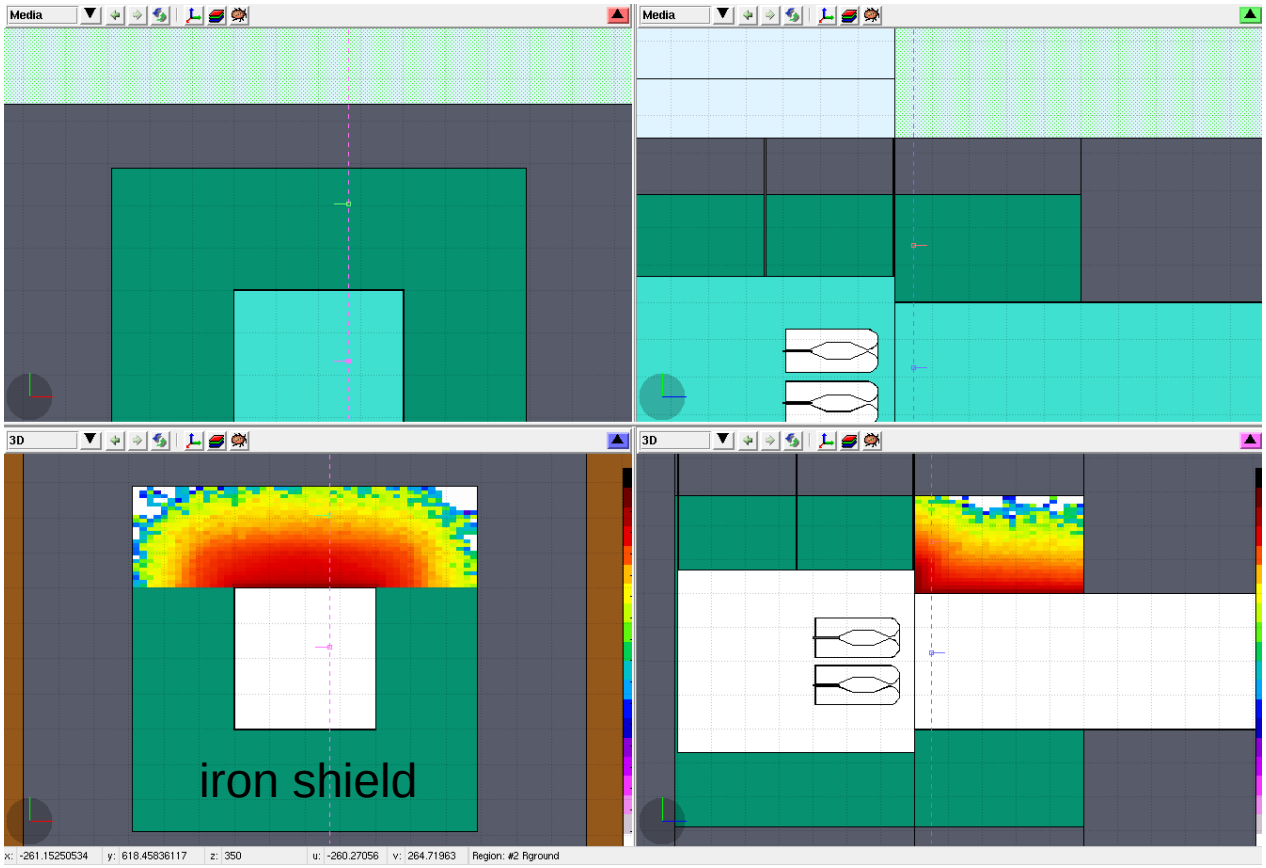
decay tunnel iron vessel + concrete

iron, concrete, molasse, He



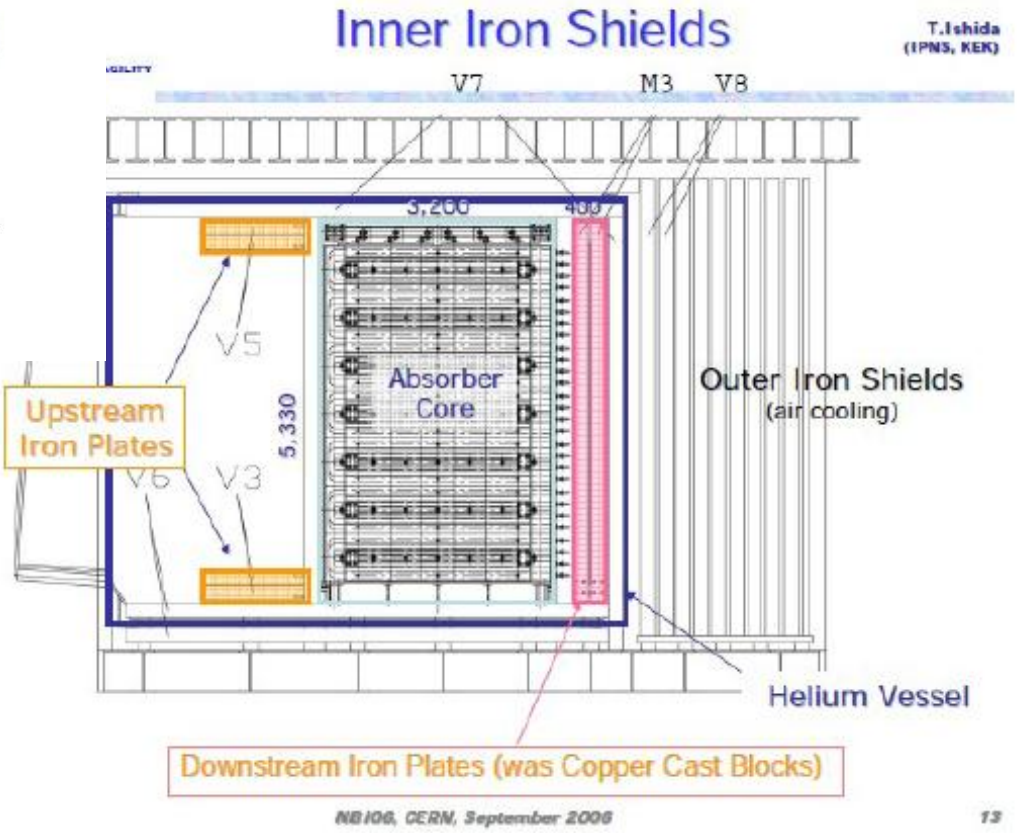
area L= 25 m	dt iron vessel H, W = 4 m t = 1.6 cm a la T2K	dt surounding concrete t = 6 m
total Power	312 kW	428 kW

decay tunnel upstream iron shield

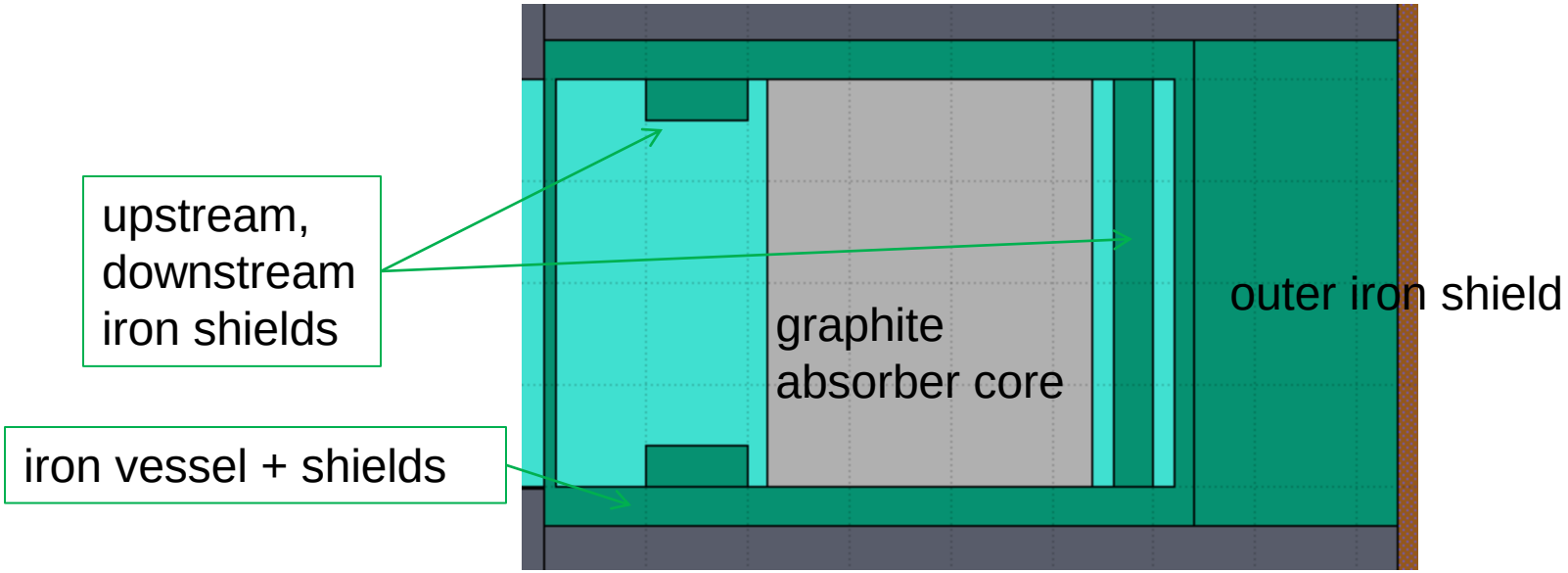


area length = 5 m	dt iron shield t= 2.9 m x = -4.9 -> 4.9 m	dt iron shield-above decay tunnel t = 2.9 m
Power	463 kW	121 kW

beam dump a la T2K

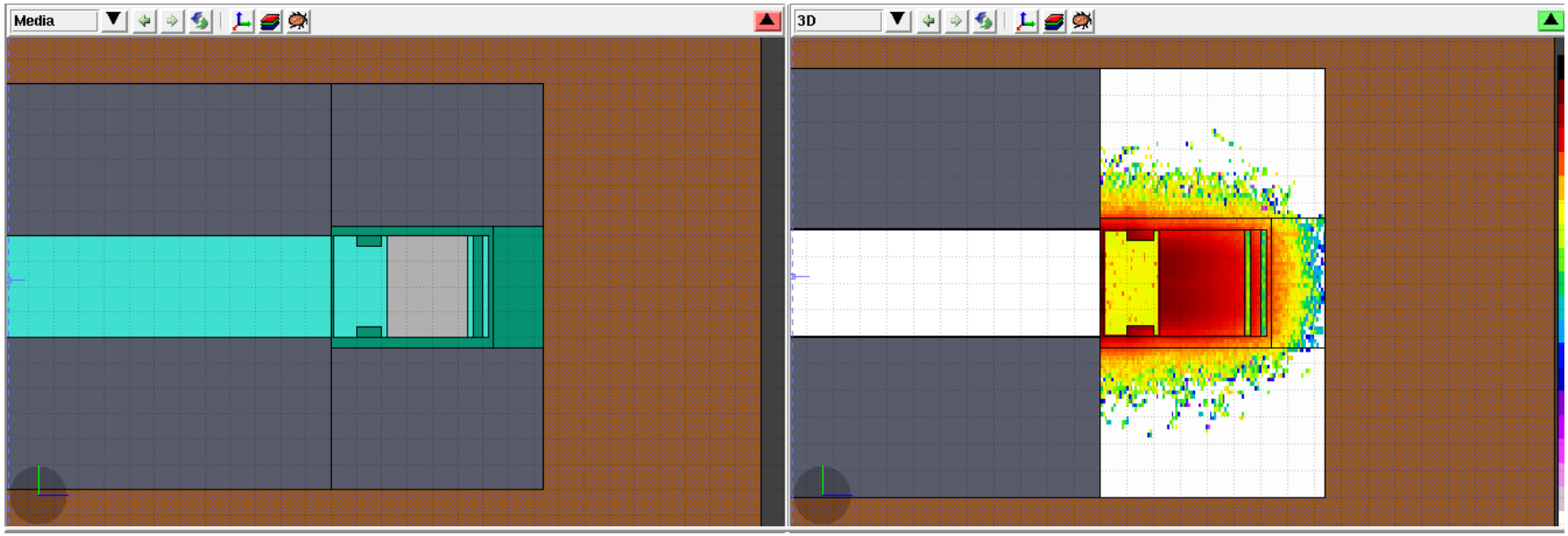


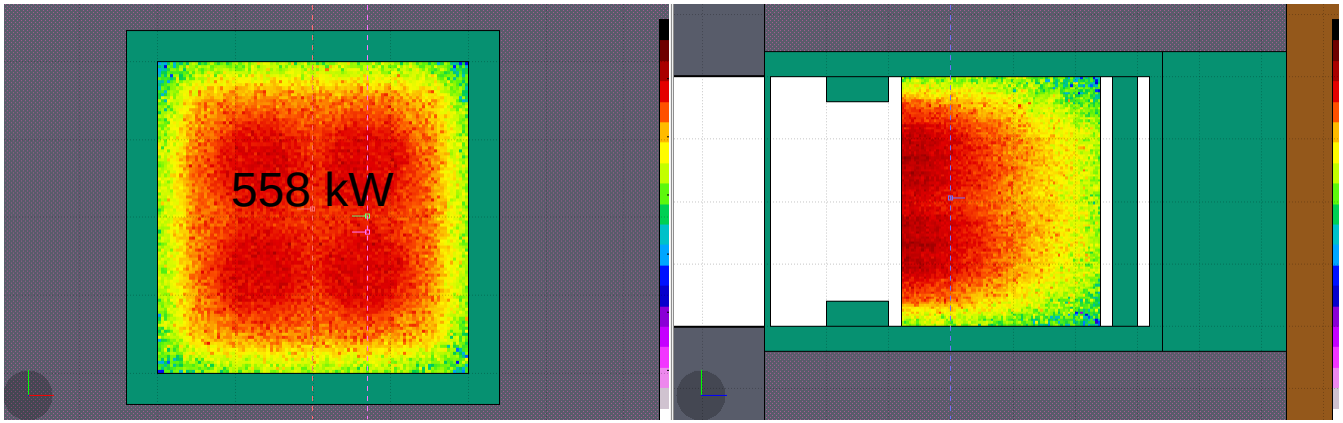
beam dump II



area L = 6.4 m	graphite L = 3.2 m H, W = 4 m	iron vessel + shields	upstream shield	downstream shield	outer shield	surrounding concrete t = 6 m
Power	558 kW	288 kW	118 kW	9 kW	1 kW	5 kW

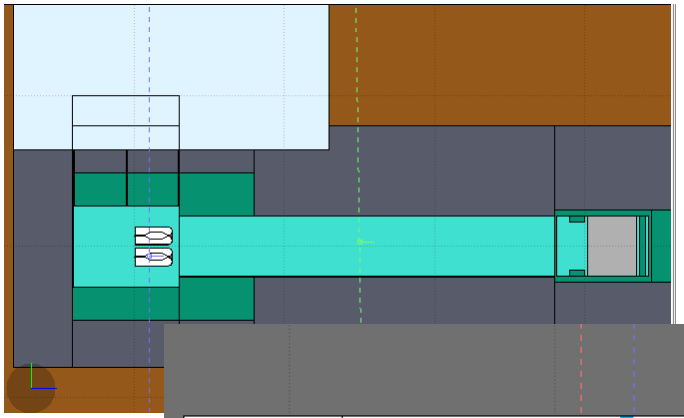
beam dump III

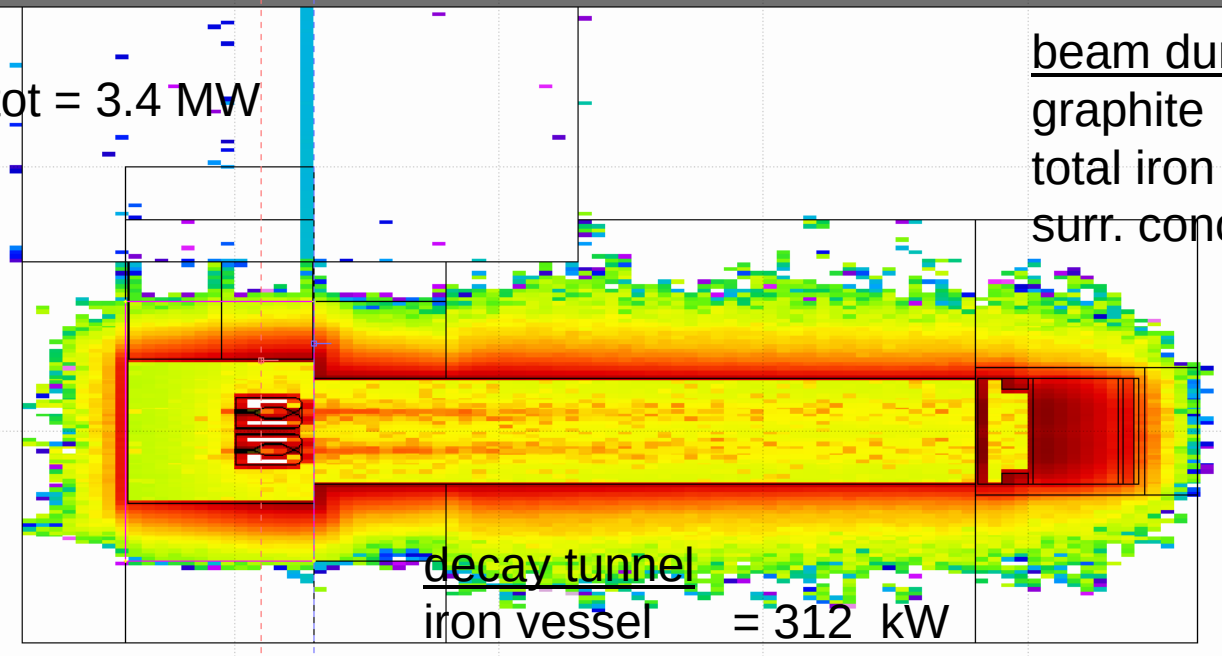




power distrinution

iron, concrete, molasse, He





P tot = 3.4 MW

beam dump
graphite = 558 kW
total iron = 416 kW
surr. concrete = 5 kW

decay tunnel
iron vessel = 312 kW
upstream iron = 463 kW
surr. concrete = 428

horns/target gallery
iron = 303 kW
concrete = 1e-2 kW

thanks