HEAT LOAD IN COOLING PANELS, SCALING DOSE RATES AND MITIGATING GROUND WATER ACTIVATION UPSTREAM OF THE TARGET CHASE

Nikolai Mokhov

Fermilab

LBNE Neutrino Beamline Meeting
Fermilab
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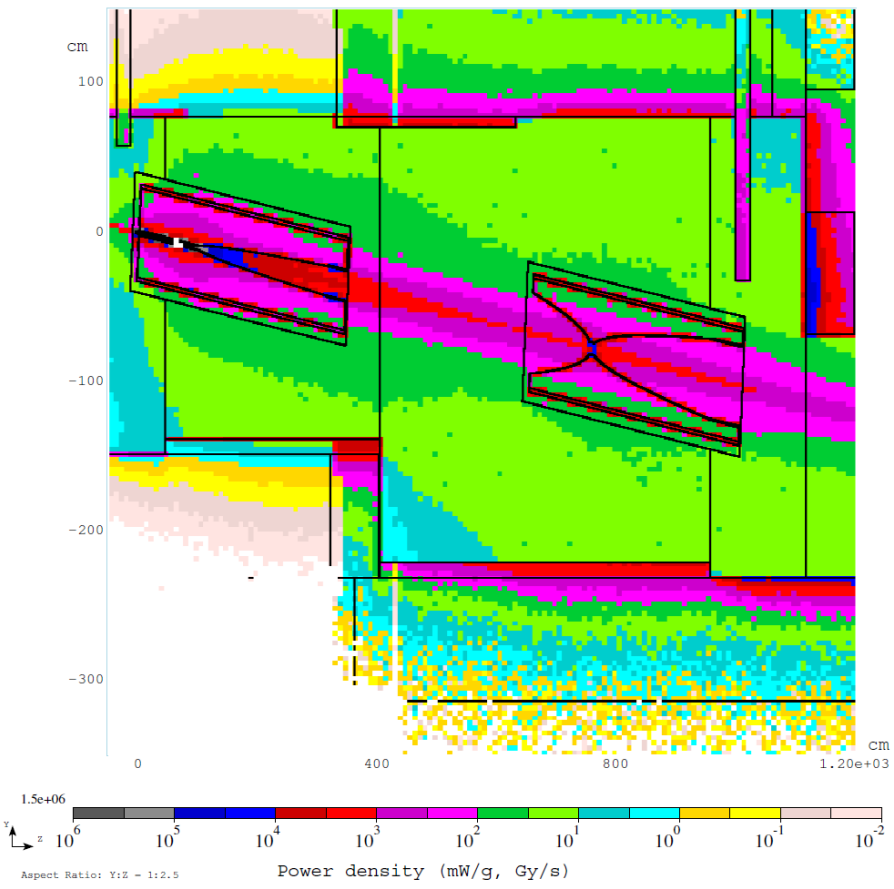
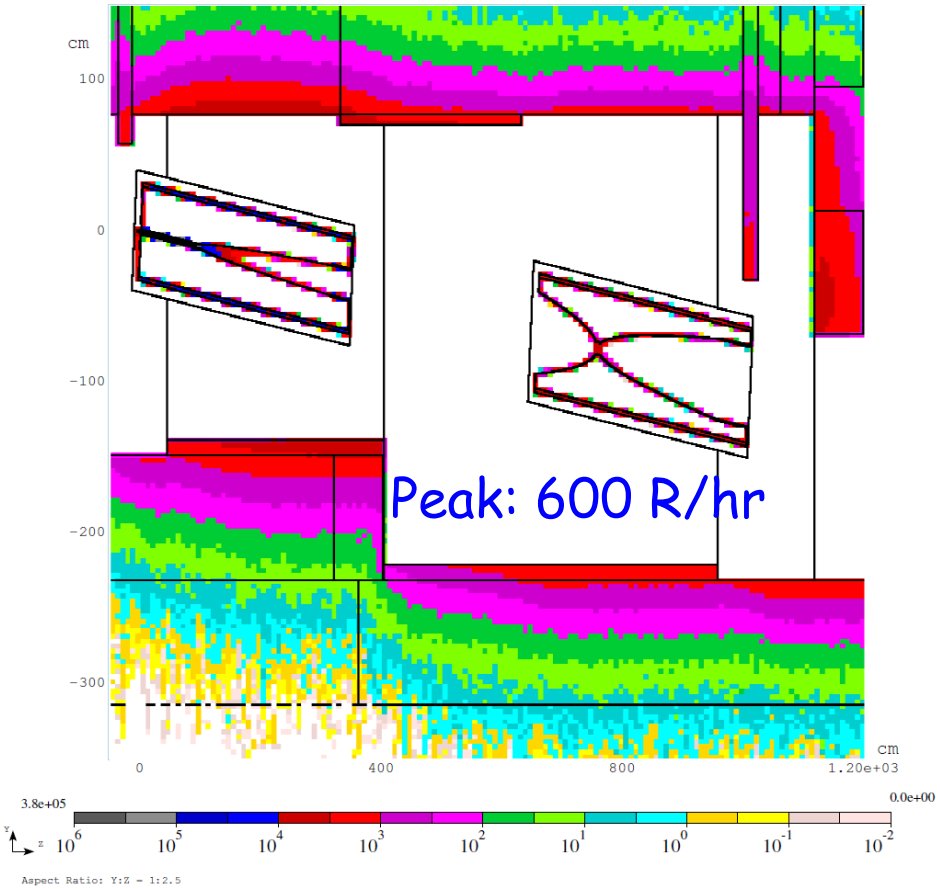
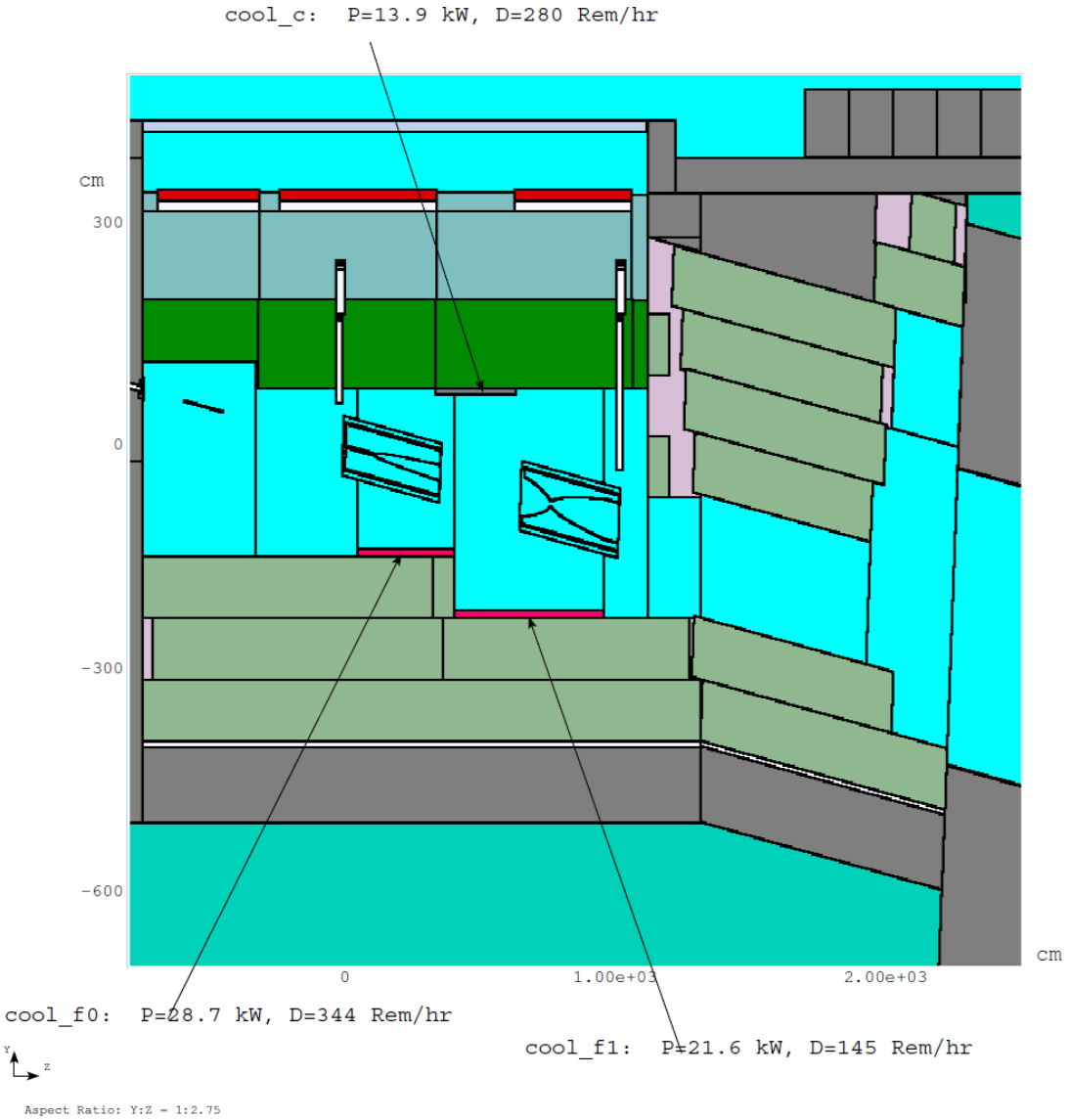
Power Density (mW/g) and Residual Dose (mSv/hr)



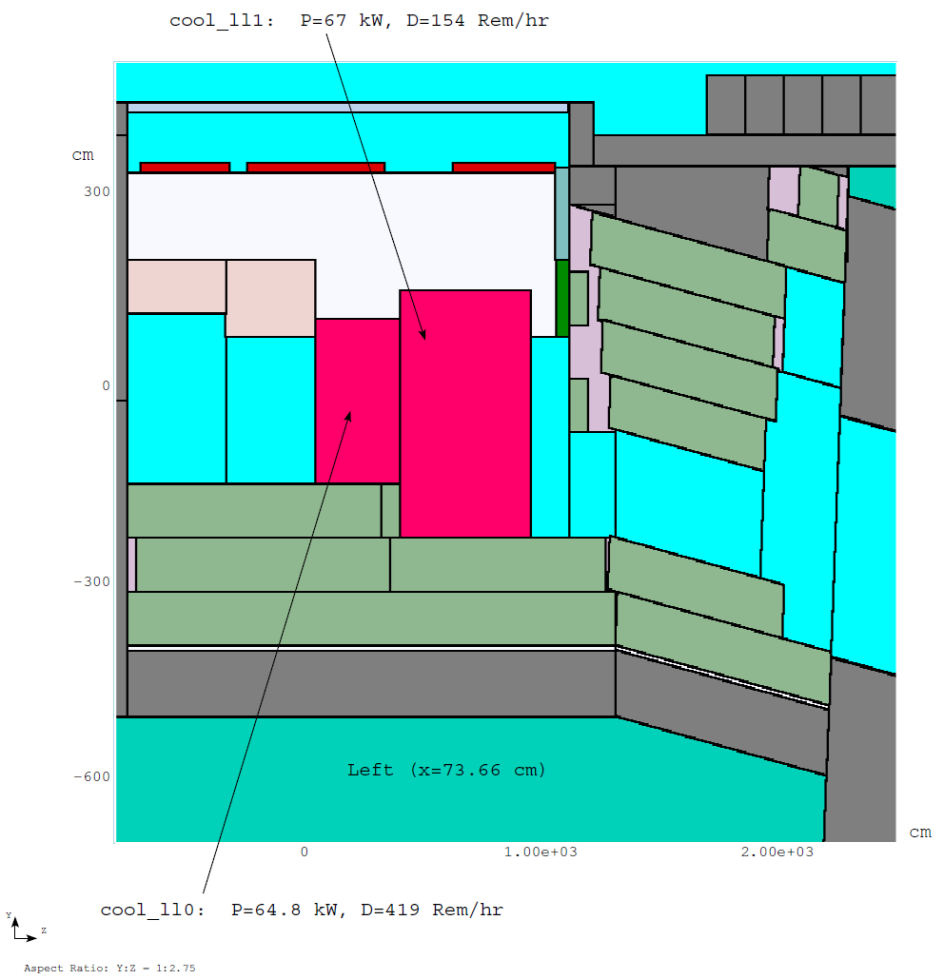


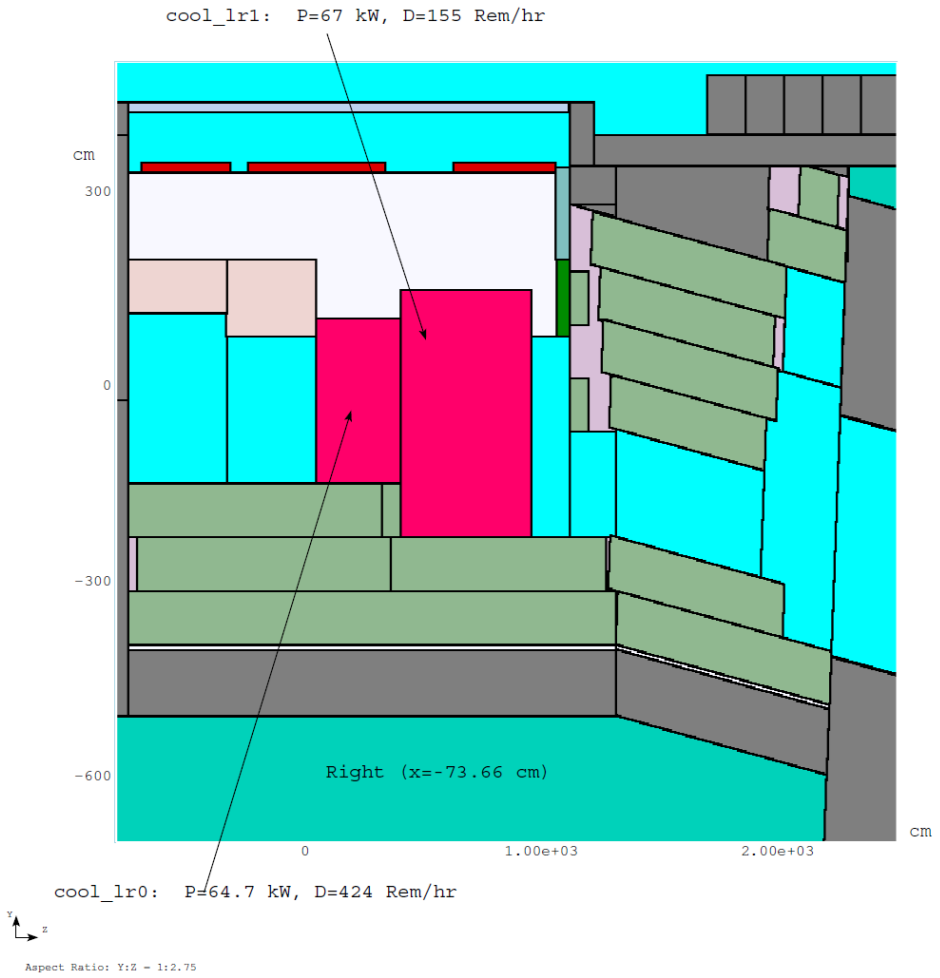
On contact
30-day irradiation, 1-day cooling

Heat Load & Contact Residual Dose (x=0)

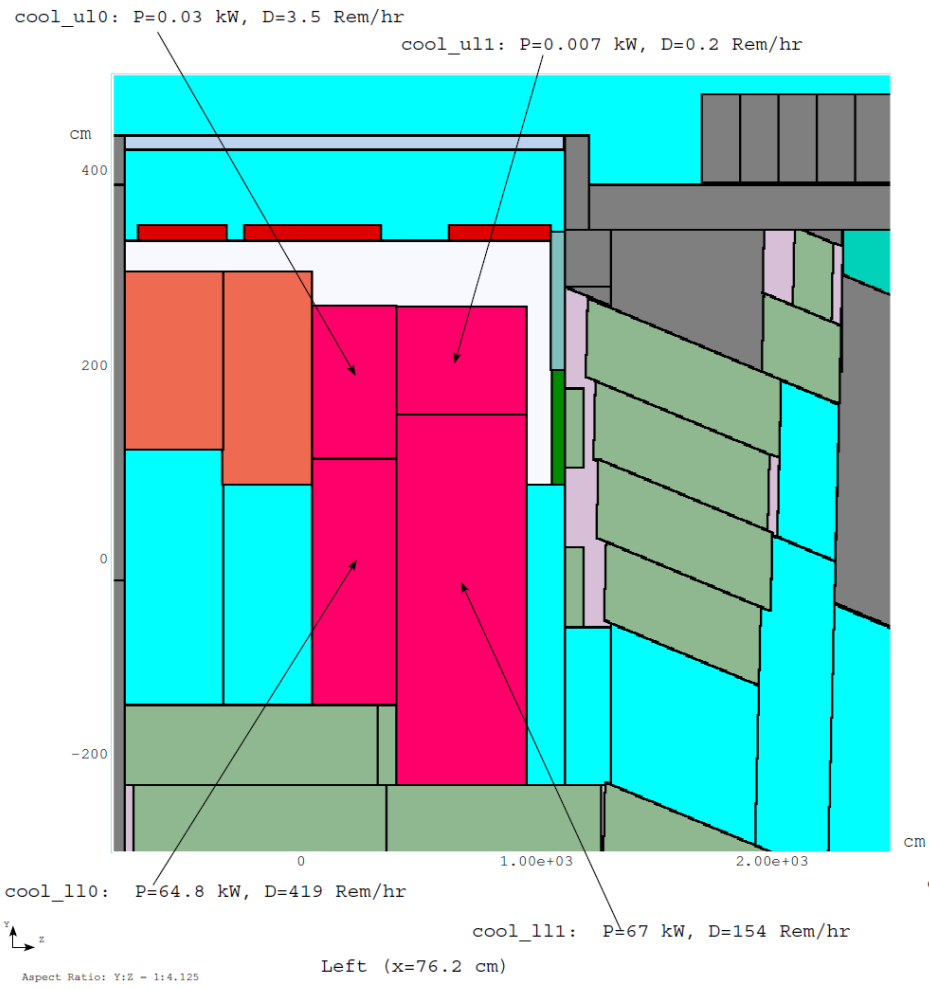


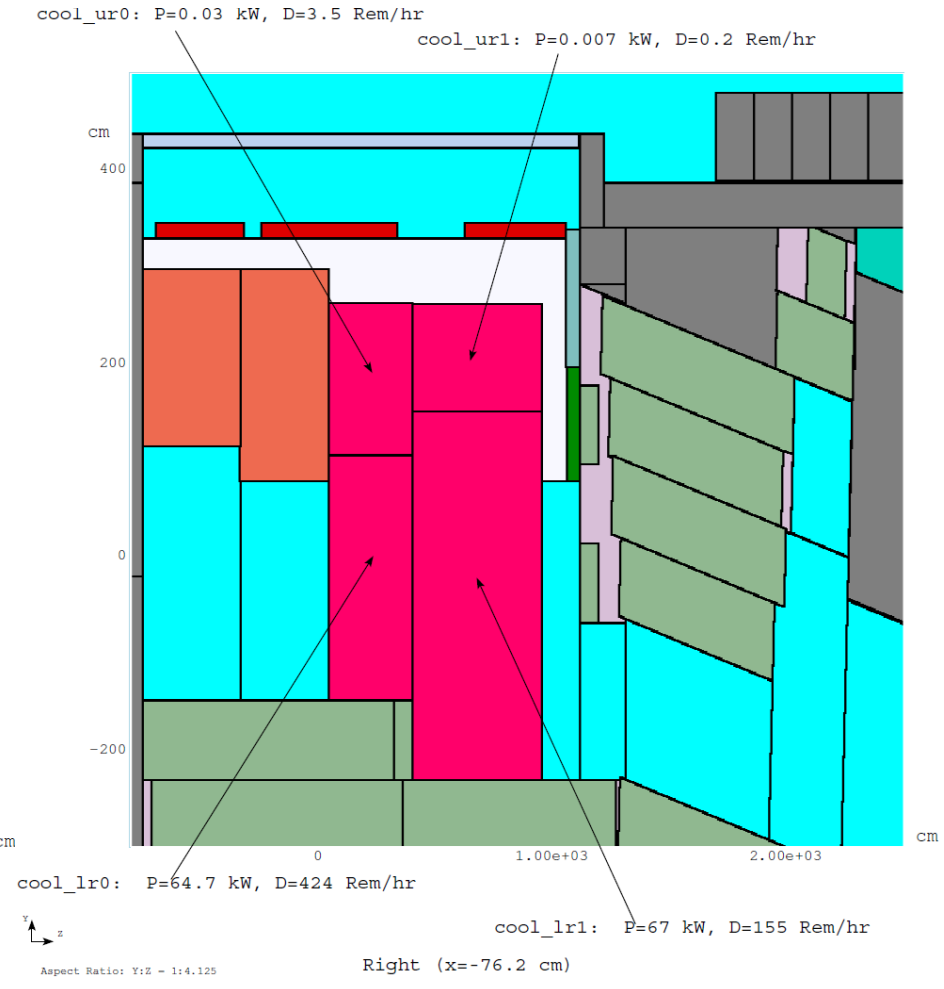
Heat Load & Contact Residual Dose (|x|=73.66 cm)





Heat Load & Contact Residual Dose (|x|=76.2 cm)





Heat Load & Contact Residual Dose

Cooling Panel	Heat Load (kW)	Dose (R/hr)
c	13.85	281
F0	28.72	344
ll0	64.78	419
lr0	64.73	424
f1	21.60	145
ll1	67.03	154
lr1	67.04	155

ul0, ur0: 0.032 kW & 3.5 R/hr
ul1,ur1: 0.007 kW & 2.0 R/hr

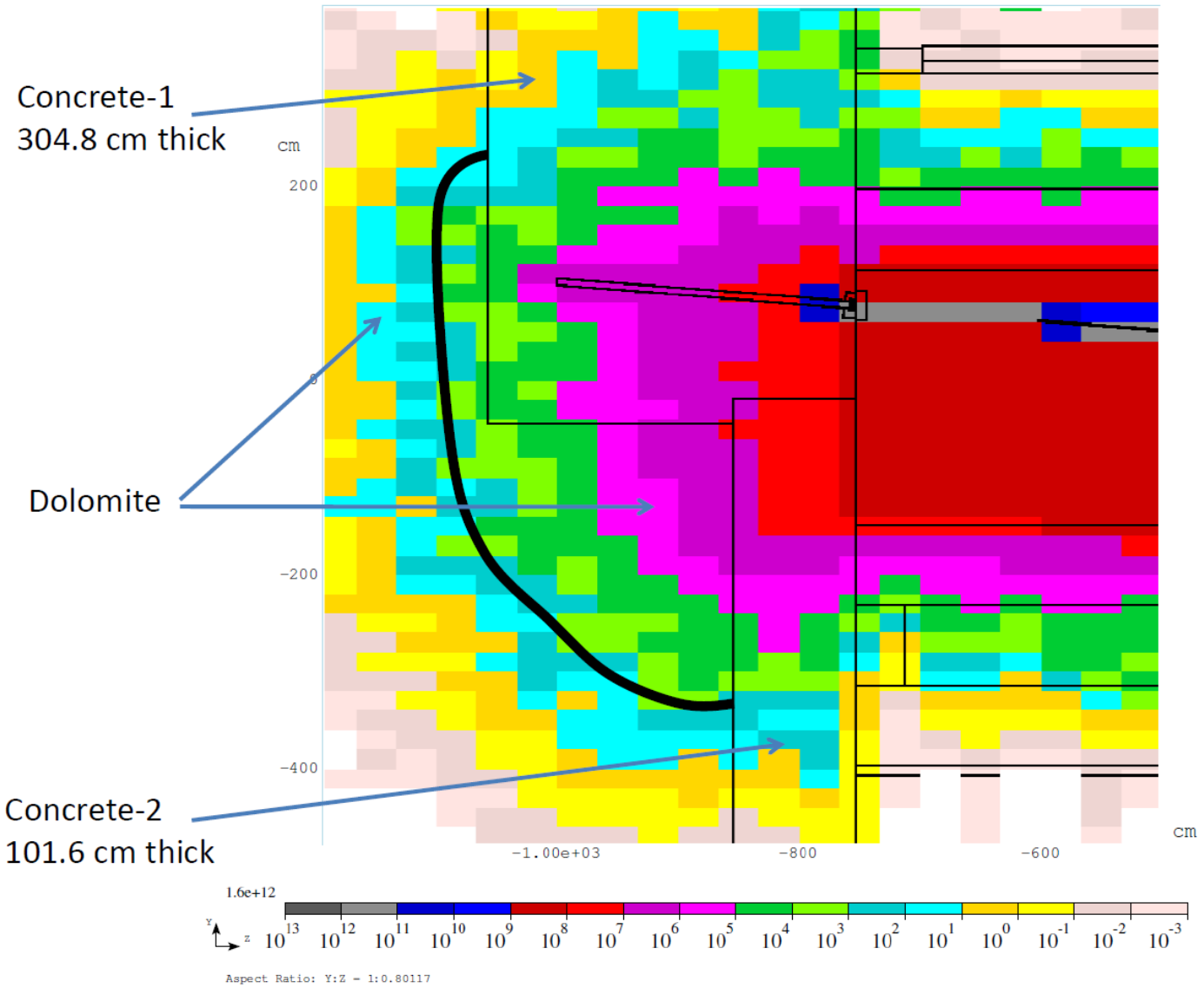
Residual Dose Scaling in Absorber Shielding

$$R = \text{Dose}(T_i, T_c) / \text{Dose}(30d, 1d)$$

Default: T_i=30d and T_c=1d
irradiation and cooling times,
on contact

T_c	4hr	1d	1.5yr
Cooling panels (T_i = 1 yr)	2.38	1.91	0.23
Concrete (T_i = 0.5 yr)	2.60	1.40	0.19

GROUND WATER ACTIVATION US TARGET (1)



ADDING CONCRETE BLOCKS