

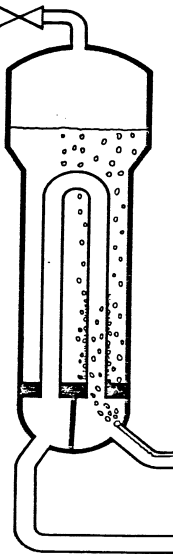
Yann Périn

Importance of multi-physics, multi-scale coupled simulations for safety analyses

Need for multi-physics coupling

Example: Main Steam Line Break

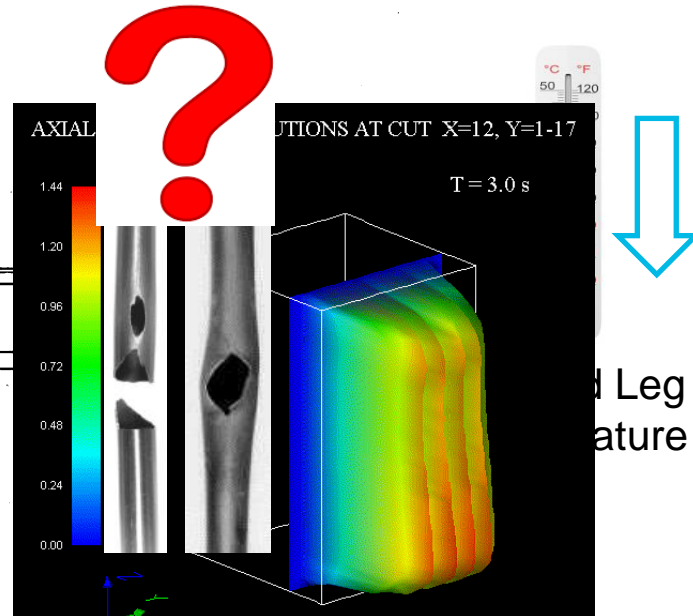
(0) Main Steam Line Break



Safety analysis:
Are the acceptance criteria met?
Is the fuel integrity preserved?

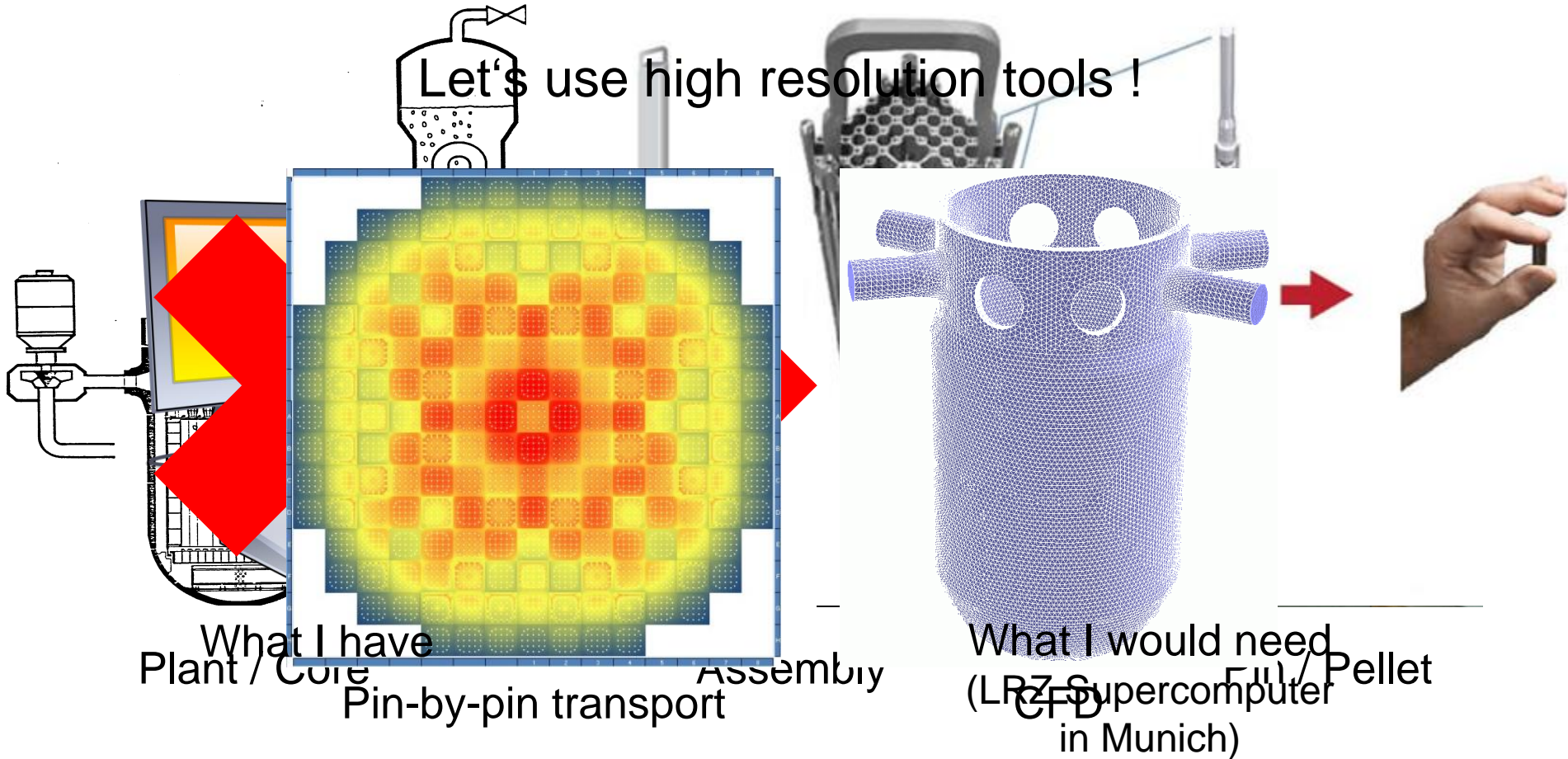


(1) Secondary Pressure

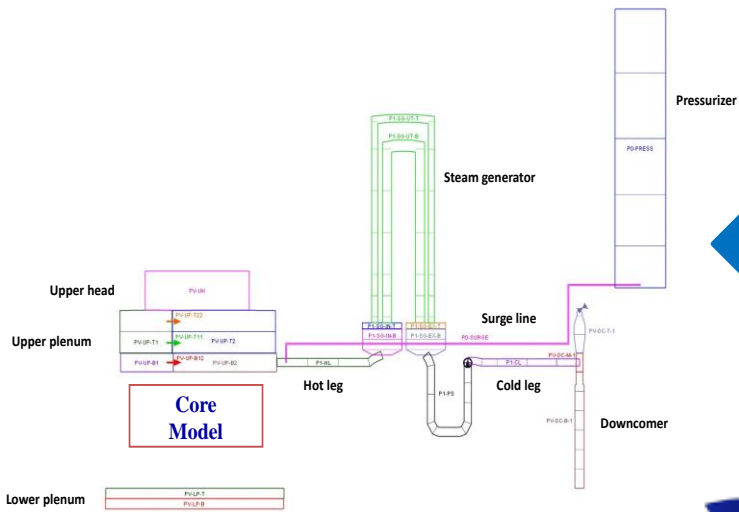


Need for multi-scale coupling

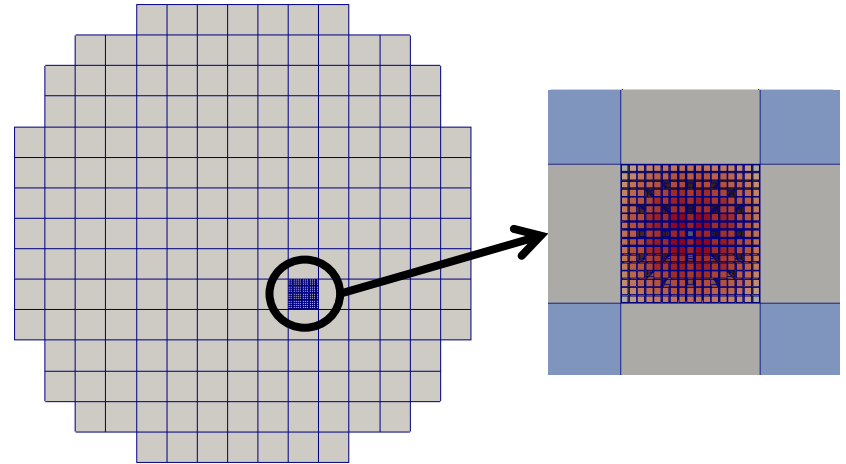
Let's use high resolution tools !



Application of the multi-physics, multi-scale approach



Feedbacks



Plant level → System code

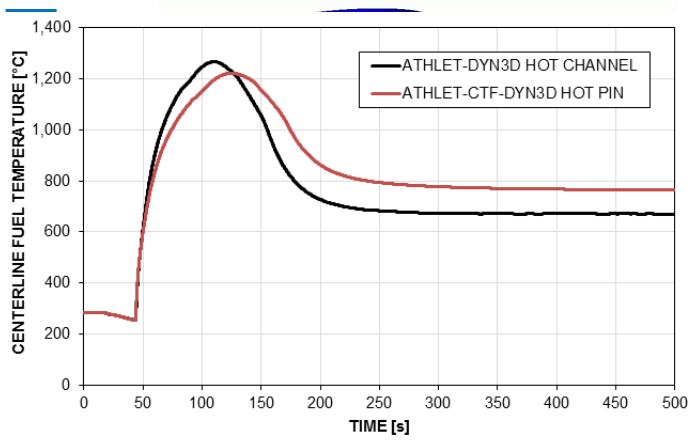
ATHLET



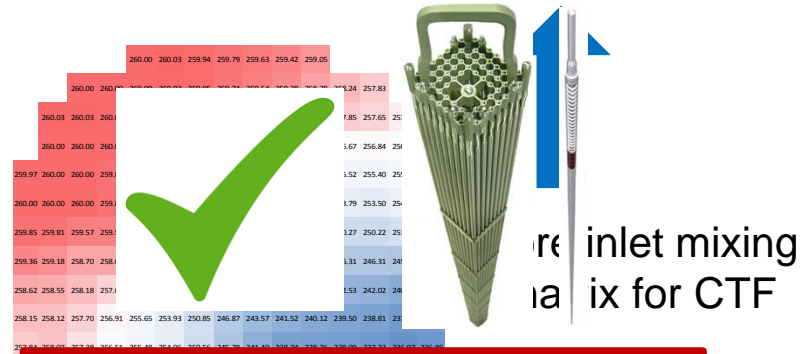
Assembly and pin level →
Diffusion code / Subchannel code

DYN3D

CTF



le **TRIO-U**



Fuel integrity preserved !

Thank you for your attention