Italian National Agency for New Technologies,
Energy and Sustainable Economic Development

# Road to qualification of the ANTEO+ sub-channel code

*Technical meeting on State-of-the-art of Thermal-hydraulics of Fast Reactors*
*26-30 September 2022, Brasimone, Italy*

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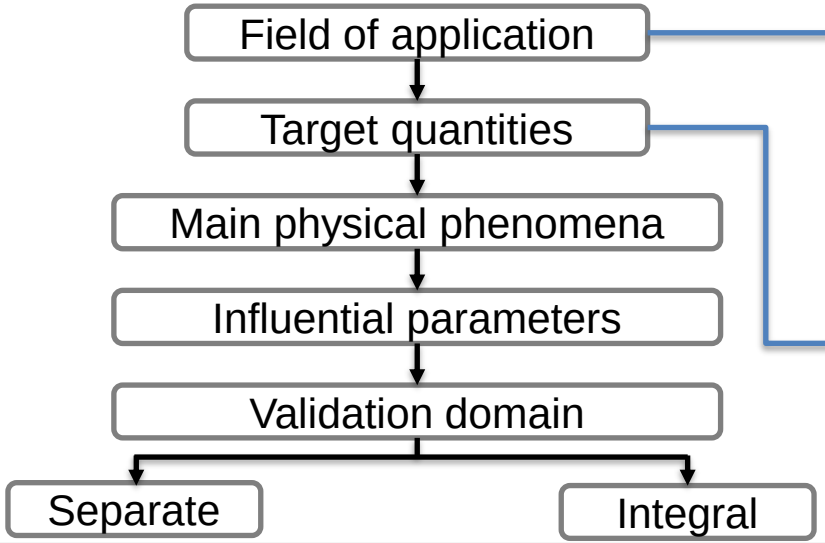
# Objectives & Structure of the work

**Qualification → sound proof with traceable confidence of uncertainties affecting target quantities in a given application domain**

## General process




## ANTEO+ case

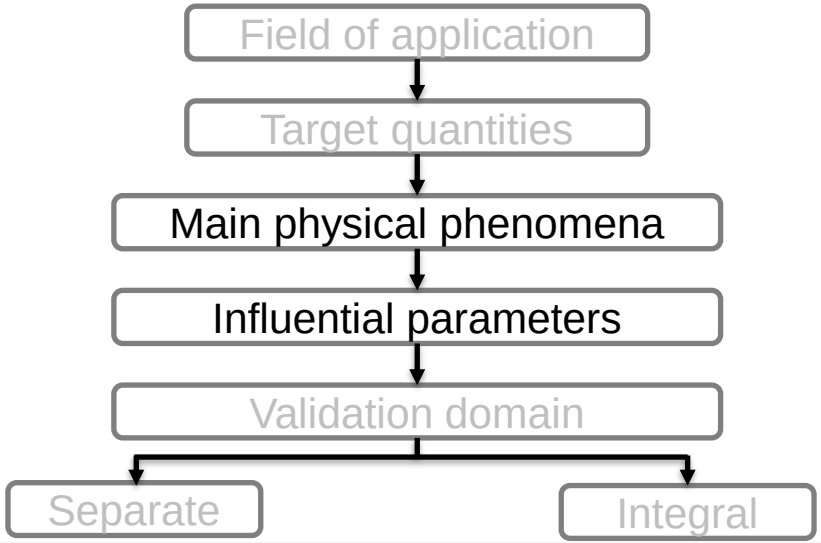
Steady-state, single phase, mixed convection of liquid metal-cooled closed bundles

- ❑ Sub-channel temperature
- ❑ Clad outer temperature
- ❑ Bundle pressure drops

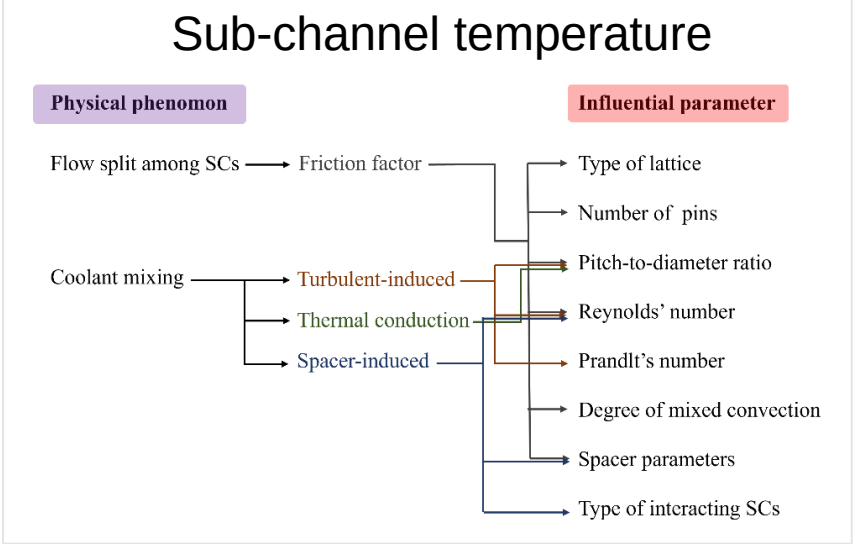
# Physical analyses

**Qualification → sound proof with traceable confidence of uncertainties affecting target quantities in a given application domain**

## General process



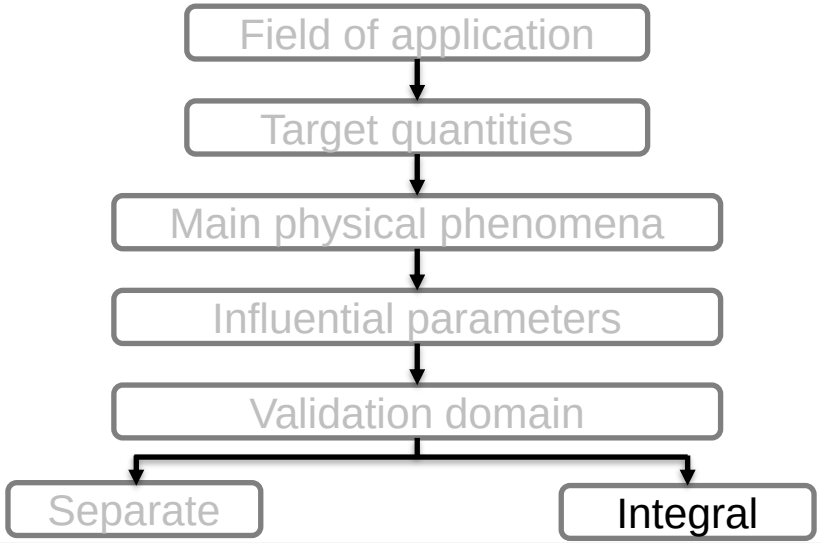

## ANTEO+ case



# Integral validation results

**Qualification → sound proof with traceable confidence of uncertainties affecting target quantities in a given application domain**

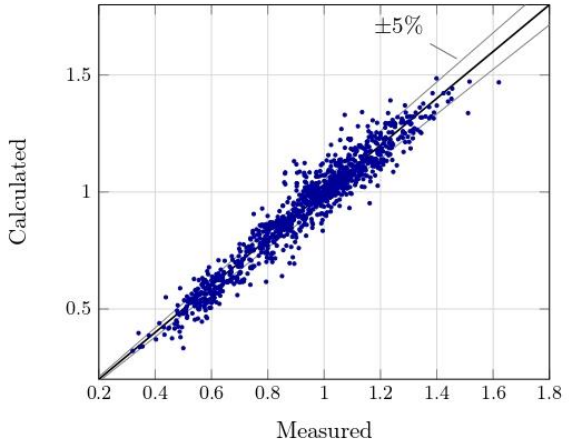
## General process




## ANTEO+ case

$$\Delta\widetilde{T}_i = \frac{T_i - T_{inlet}}{T_{outlet} - T_{inlet}}$$

Normalized SC temperature increase



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