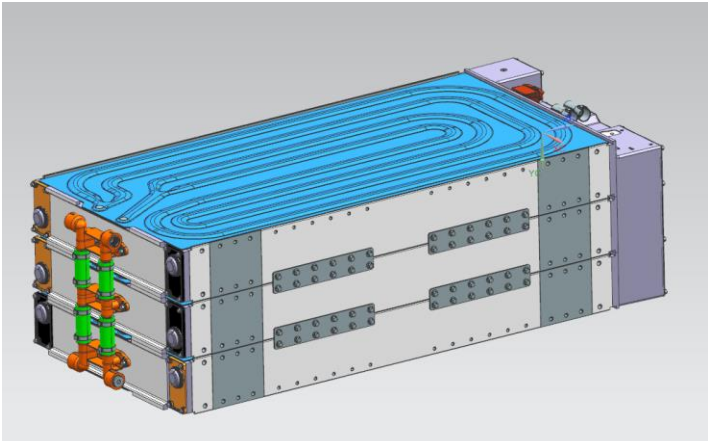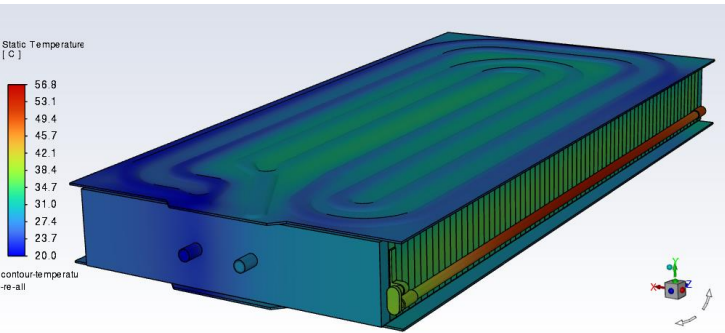# Thermal Modeling Works

Dongmyung Suh

Thermal CFD Analysis: Liquid Cooling Battery Package
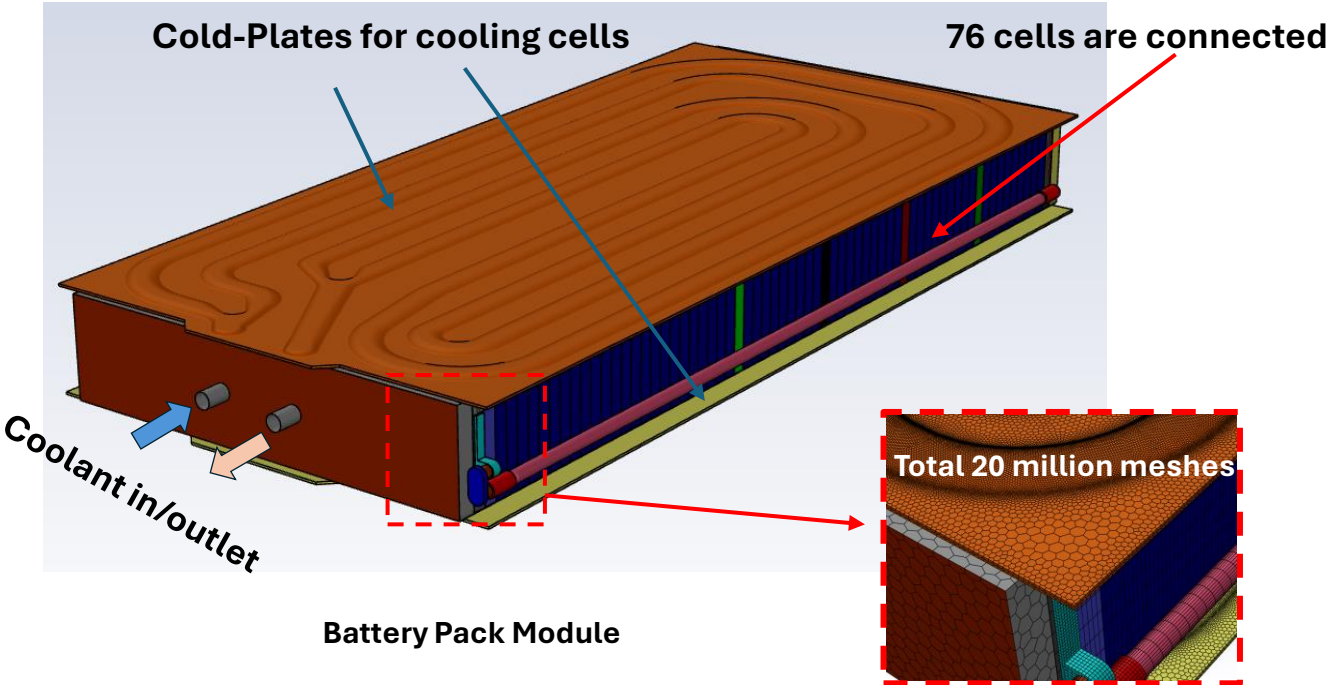
Thermal CFD Analysis: Liquid Cooling Battery Package
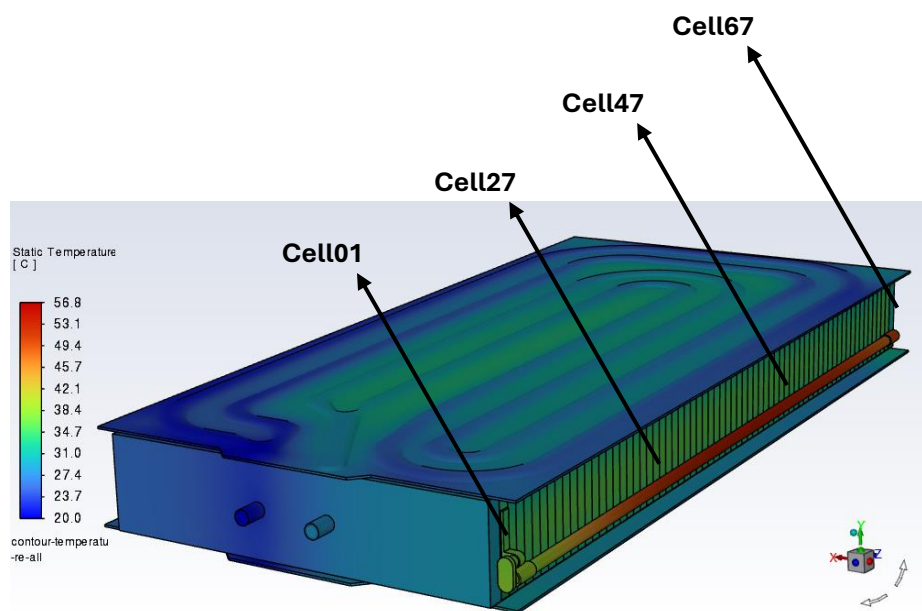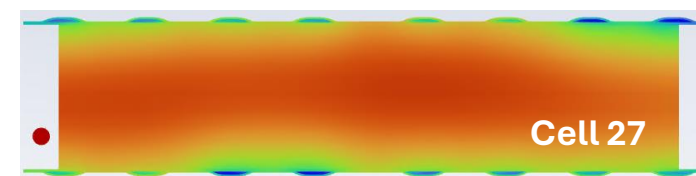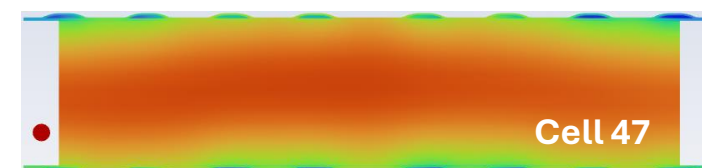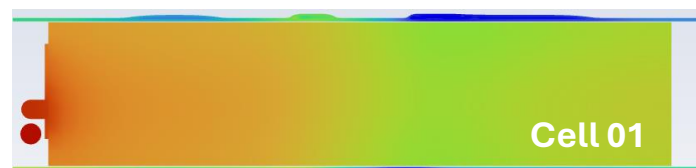

ATLAS(104kWh) Battery Package

Cold-Plates for cooling cells

76 cells are connected

Coolant in/outlet

Total 20 million meshes

Battery Pack Module

Static Temperature
[C]

Thermal Analysis: Temperature distribution

Thermal Analysis: Temperature distribution

Static Temperature [C]

56.8
53.1
49.4
45.7
42.1
38.4
34.7
31.0
27.4
23.7
20.0

contour-temperatu-re-all

Cell67

Cell47

Cell27

Cell01

Cell 01

Cell 47

Cell 27

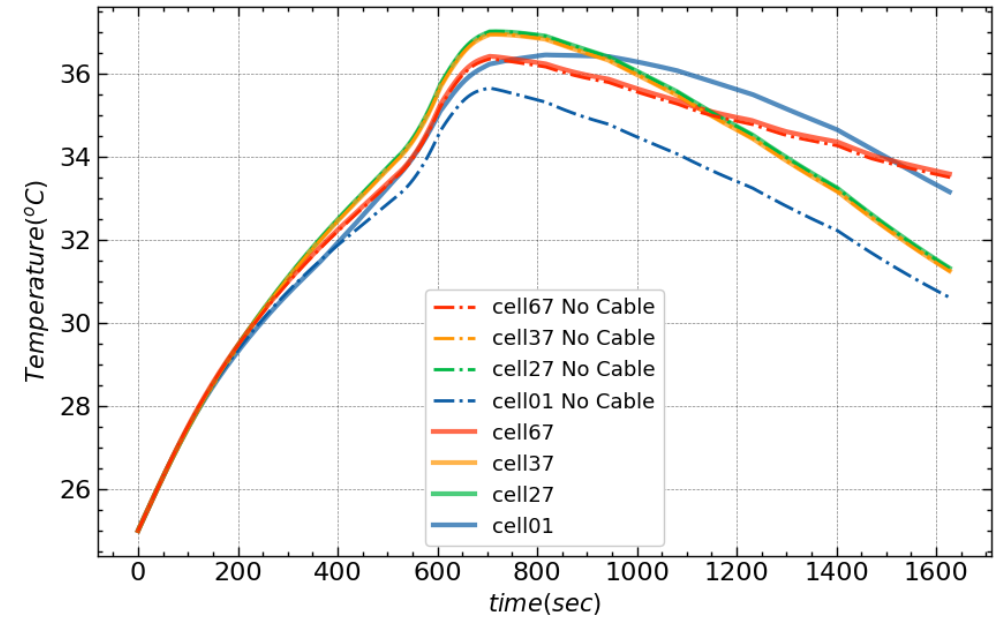Cell 67

Temperature Distribution of Cells
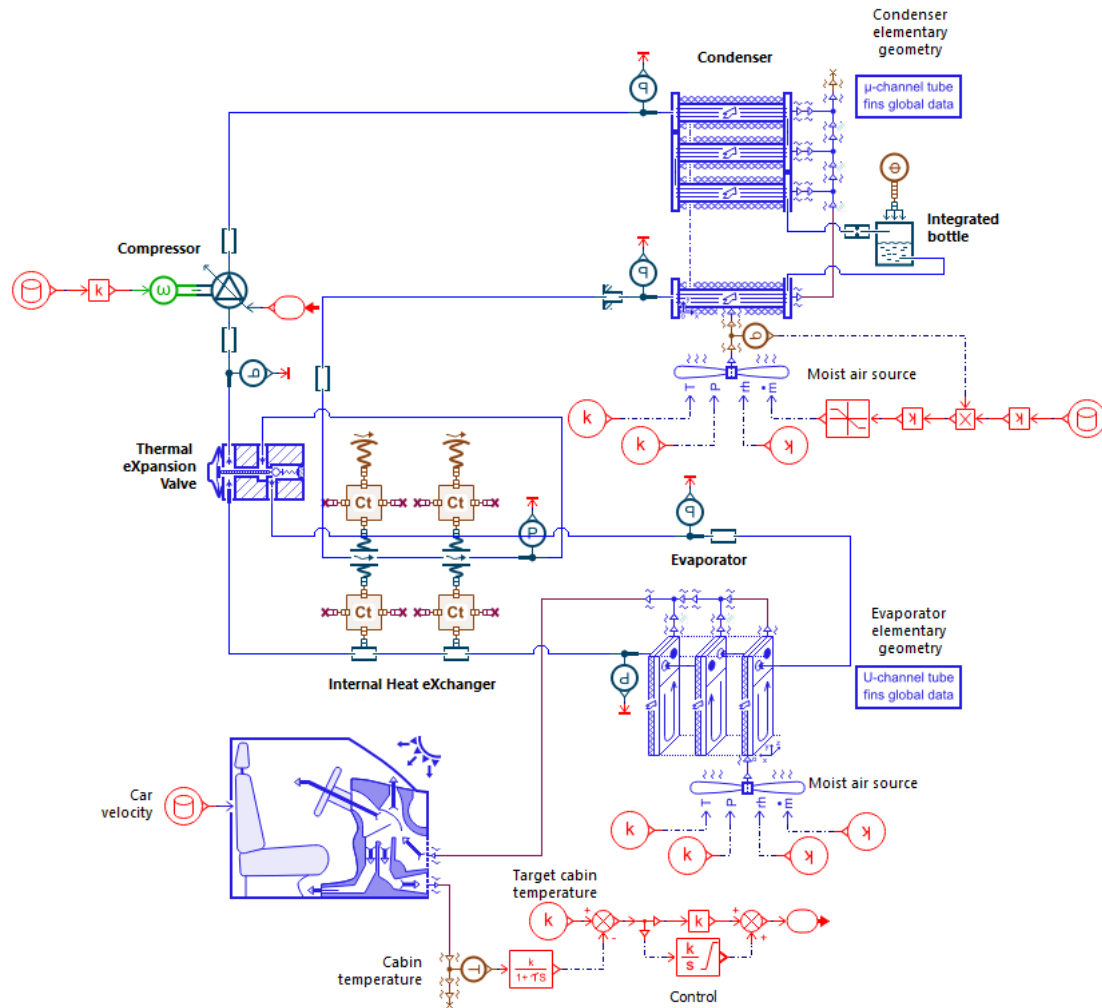
Transient Thermal Behavior
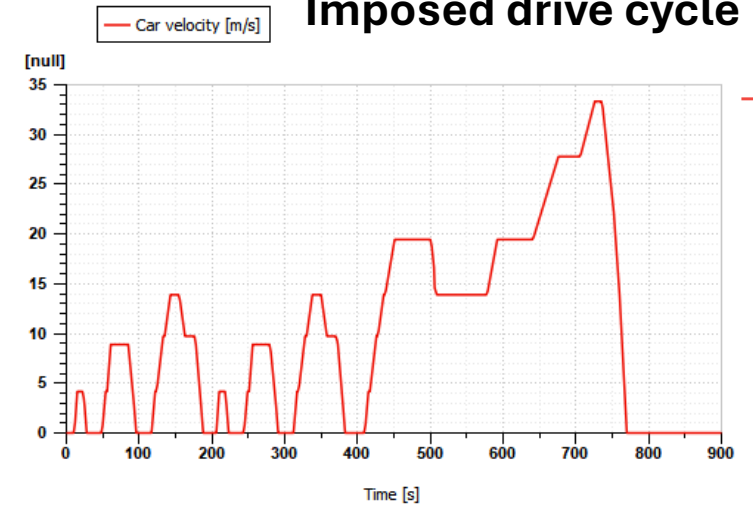

Coolant Temperature Evolution

Max. Temperature in Each Cell

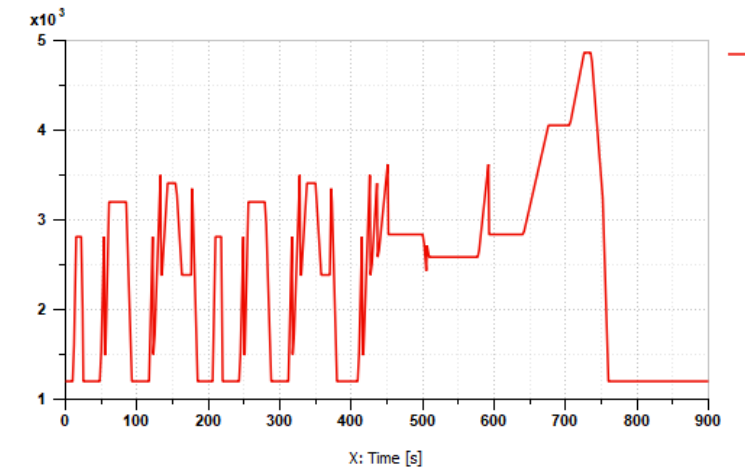# Thermal System Modeling: HVAC of a vehicle Cabin
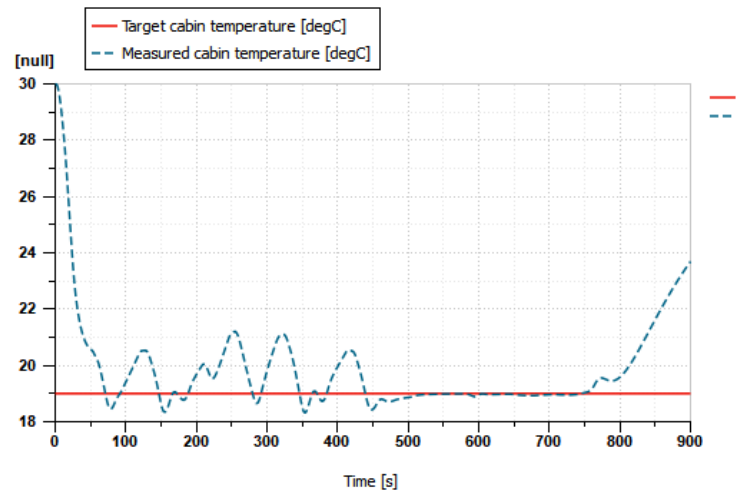
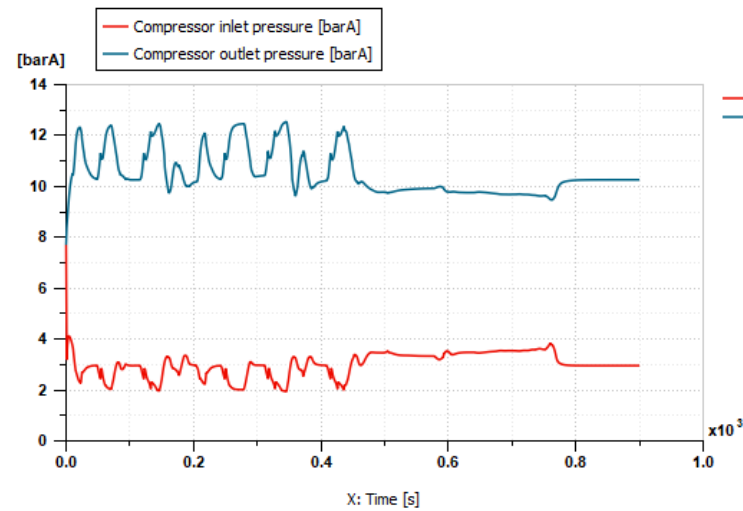# Thermal System Modeling: HVAC of a vehicle Cabin

Imposed drive cycle
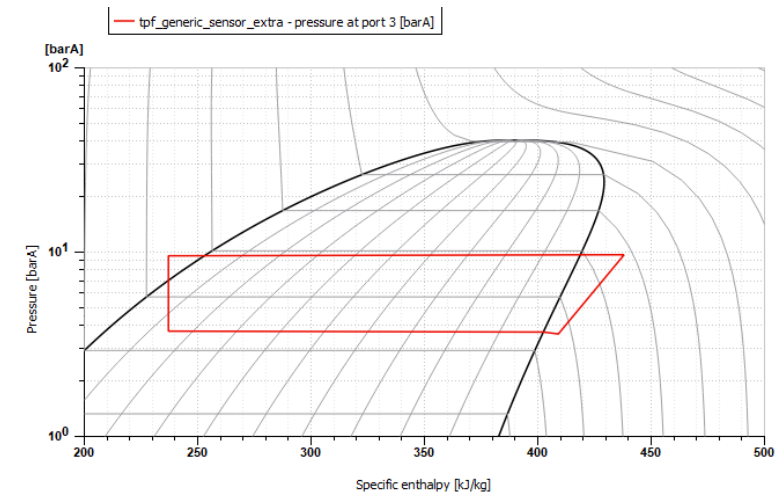
Evolution of the compressor rotary speed
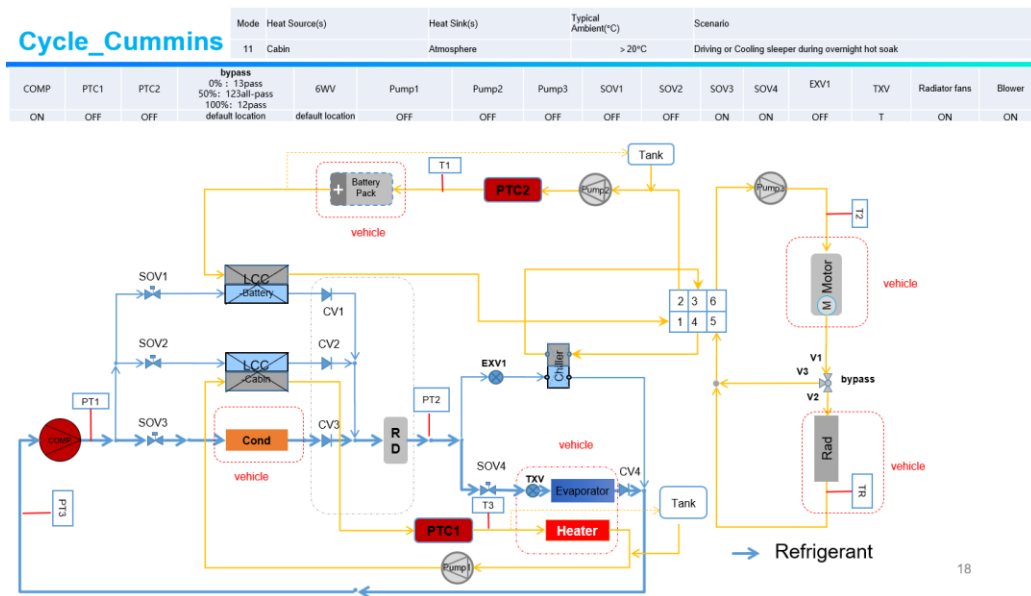
Evolution of the cabin temperature

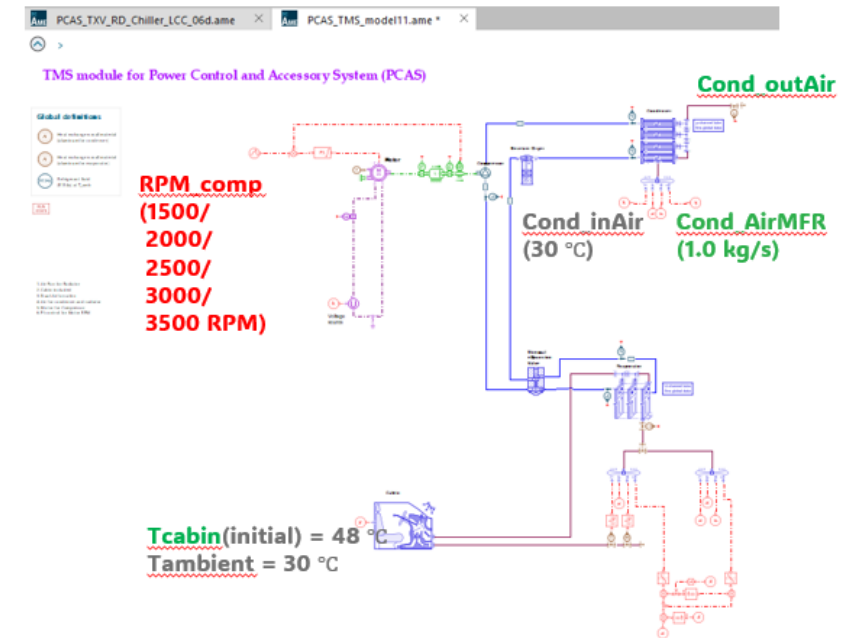**Evolution of pressure at compressor inlet and outlet**

Thermodynamic plot

1D Thermal Modeling for Thermal Management System

1D Thermal Modeling for Thermal Management System

System Diagram

Amesim Model