Simulation of a Hypercar Underhood Module with GT-Auto3DFlow

➢ Supporting companies: **GammaTech Engineering** (GTE) | **BUGATTI-RIMAC** (BR)

- Start date: February/March 2026
- Project duration: 6÷8 months
- Site:
  - GTE's offices in Turin
- Compensations: Meals, travel expenses
- Motivations and Project Scope
  - Accurately **predicting airflows and thermal behavior in a vehicle's underhood**, essential for cooling optimization, poses several challenges:
    - Predicting recirculation around heat exchangers and fan shrouds
    - Modeling active flaps and shutters in the fluid stream
    - Ensuring greater flexibility in component selection, orientation, and solution space
  - Assess Auto-3DFlow by GT-SUITE as a solution to these challenges, acting as an intermediate tool between full 3D simulations and simpler 1D/quasi-3D tools by coupling 3D airflow modeling with GT-SUITE's standard modelling approach for heat exchangers.
- Thesis proposal:
  - The student will develop a methodology for **building and simulating a complete underhood compartment using GT-SUITE** simulation software, leveraging the capabilities of the **Auto-3DFlow tool**.
  - The methodology will be supported by experimental data and/or full 3D-CFD data for calibration and validation of the models.