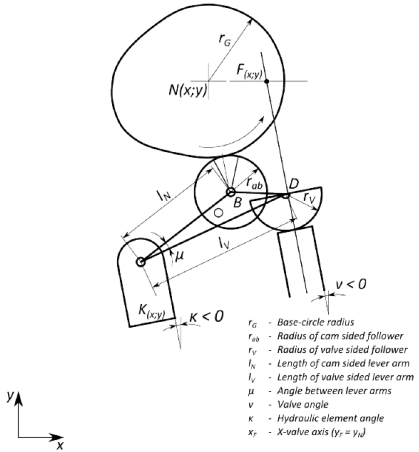
Building and Correlation of a Valvetrain Simulation Model for a High-Performance Internal Combustion Engine

- Supporting companies:
  - **POWERTECH Engineering S.r.l.**
  - **Automobili Lamborghini S.p.A.**
- Start date: January/February 2022
- Project duration: 6÷8 months
- Site:
  - POWERTECH's offices in Turin (onsite + remote)
    - Possible visit(s) to Lamborghini offices in Sant'Agata Bolognese (BO)
- Compensations: meals, travel expenses



- Project Scope:
  - In the framework of an ever-increasing virtualization of the engine development process, CAE simulation is supporting engine manufacturers in improving and optimizing performance and NVH.
  - In this project, the student will be tasked to build a valvetrain single-cylinder GT-SUITE model, based on current Lamborghini solution. The model will be then tuned and validated against experimental measurements from Lamborghini cold-test bench.
  - Sensitivity analyses will be performed on the main valvetrain parameters (contact geometry, camshaft position…), possible improvements will be thus pointed out and assessed thoroughly.
  - Expected results from this activity include a correlated model for the baseline solution and an optimized variant, targeting high revs operation.