## Validation of vortex generation method for zonal LES <u>Studienarbeit / Masterarbeit at the ISM</u>

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The application of zonal Large-Eddy-Simulation (LES) allows to deal with regions of complex geometry, such as **rough surfaces**, on which RANS models can't capture proper flow behavior. Still, setting proper inlet conditions on the LES zone is required to develop the natural fluctuations encountered in a turbulent boundary layer. Otherwise, the boundary layer will tend towards unphysical solutions.

## <u>Task:</u>

- 1. Investigate proper inlet conditions for LES zones.
- 2. Simulate turbulent boundary layers on rough surfaces.
- 3. Apply knowledge for enhancing cooling of aircraft engines.

## **Requirements:**

- Interest in CFD & aerodynamics.
- Basic programming skills.
- Knowledge of CFD tools.
- (Student will be trained in the use of FLUENT)





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