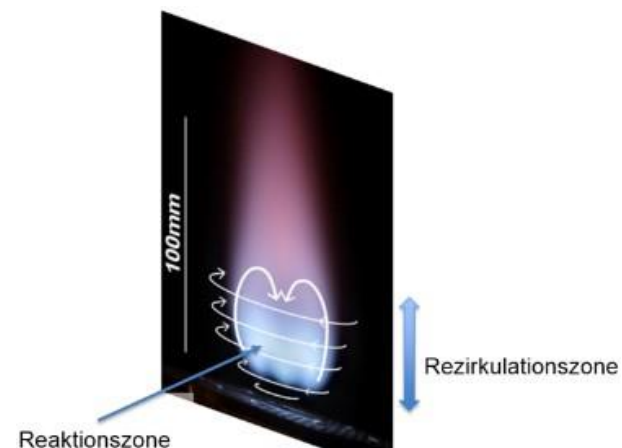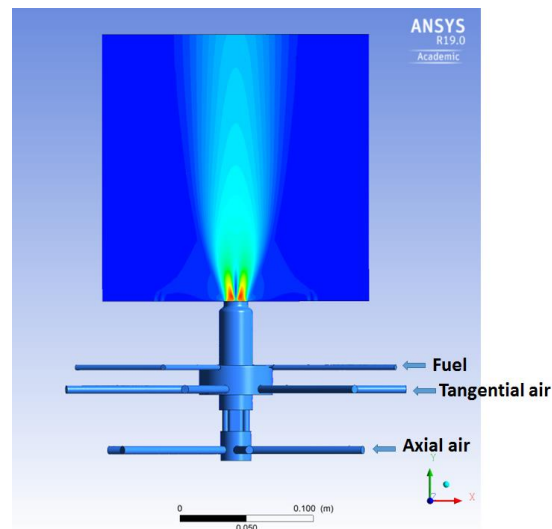# Numerical Investigation of a swirl-stabilized methane-fired burner using CONVERGE and FLUENT

- Experiments have been performed at TU Graz for the existing swirl-stabilized methane-fired burner applying different techniques as Laser Interferometric Vibrometry (LIV) and Particle Image Velocimetry (PIV). These technologies provide information on heat release and velocity fluctuations.

- Numerical simulations of the swirl-stabilized methane-fired burner are already available with FLUENT and CONVERGE

- **The main aim of this thesis is to perform comparisons between the two codes CONVERGE and FLUENT**
  - The student can also try to run other simulations changing turbulence model or making the mesh finer.

- The ability and performance of the two different codes will be compared and validated against experimental data.
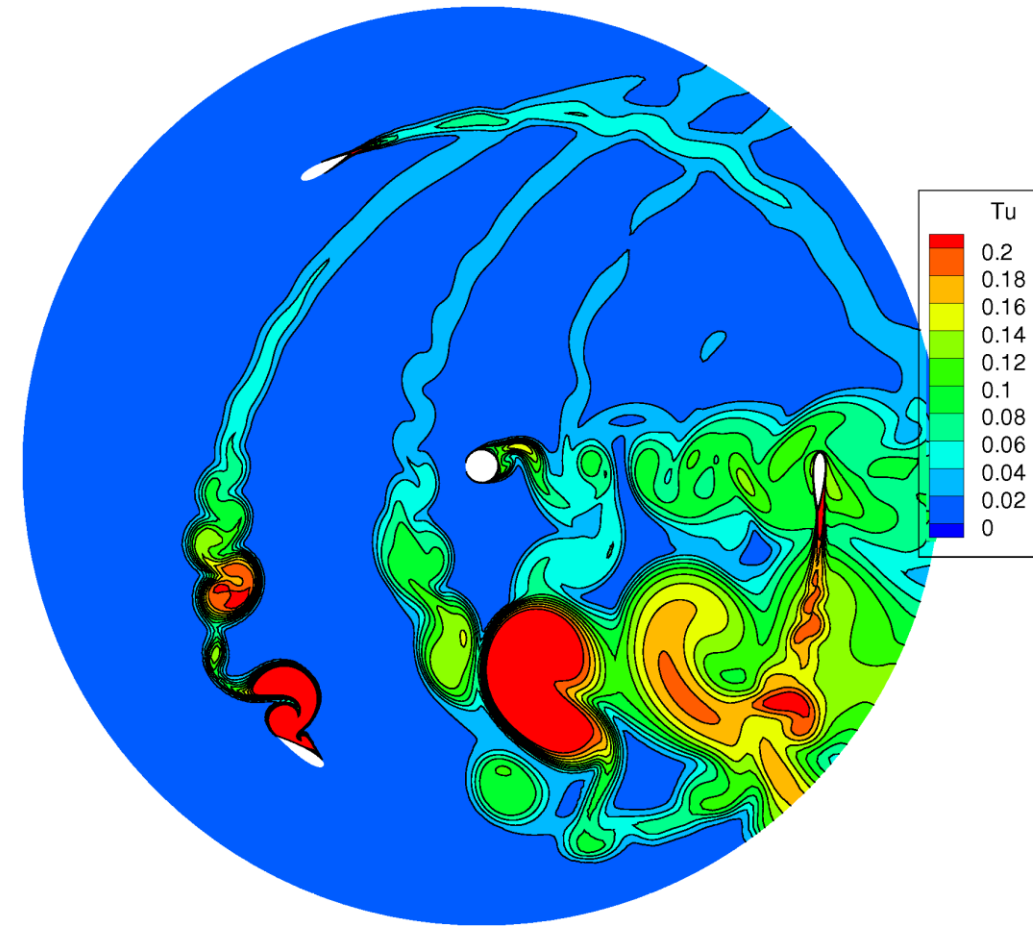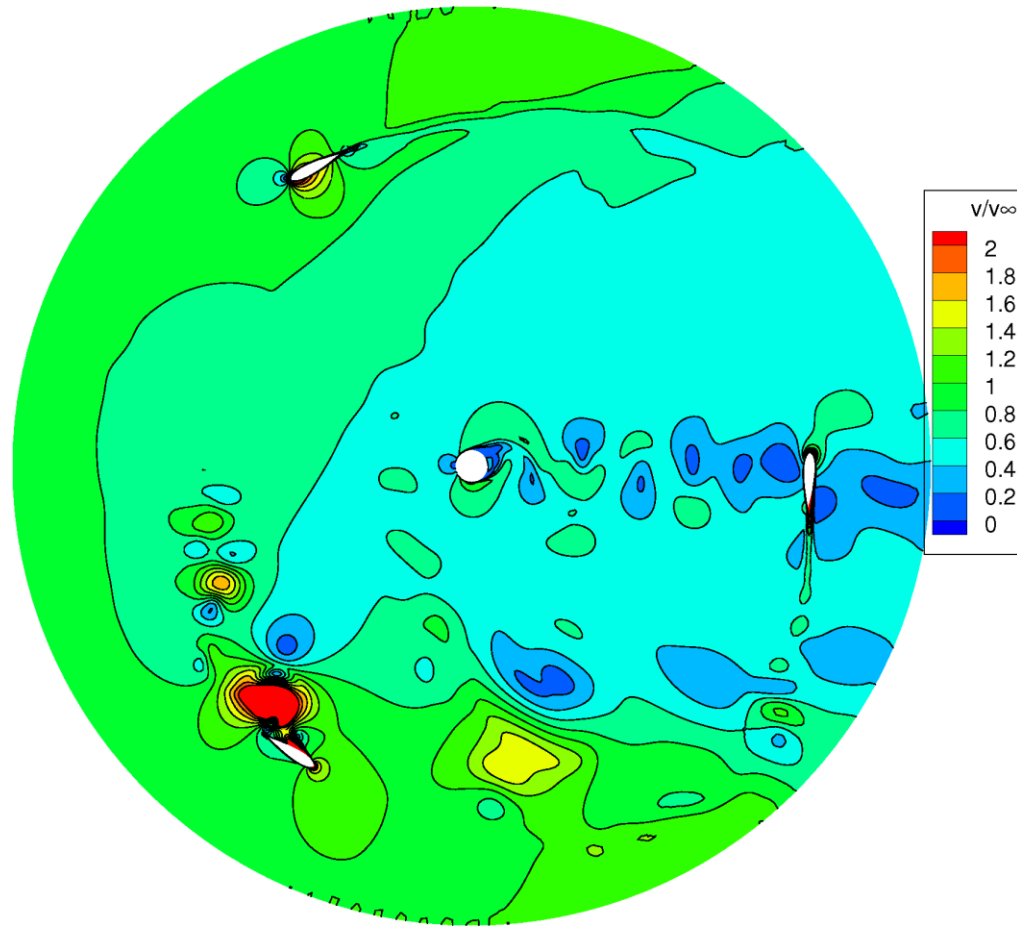
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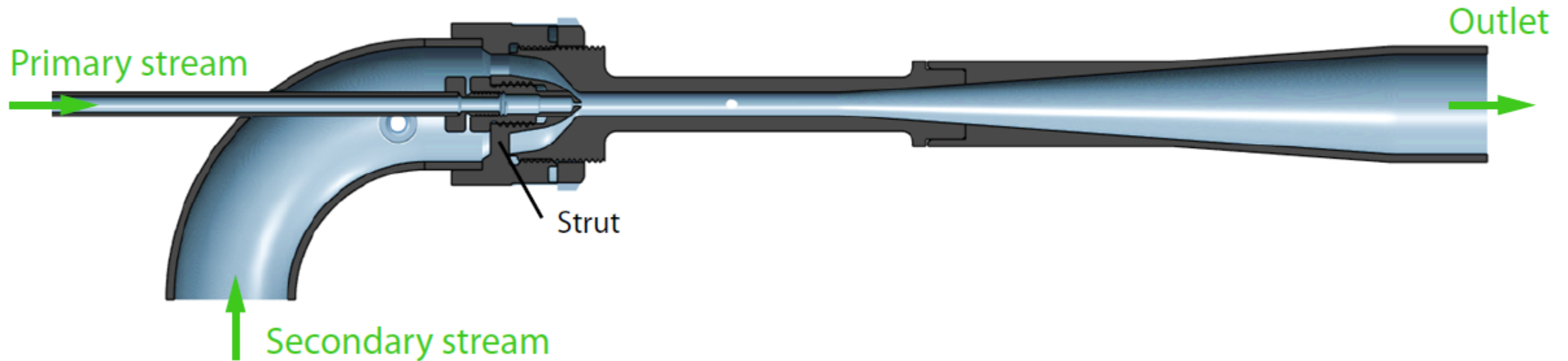
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Numerical Simulation of the 2D Flow in a Vertical-Axis Wind Turbine

- A computational mesh shall be generated with our in-house mesh generator AIGrid3D
- A steady and then unsteady simulation with our in-house code LINARS shall be done
- Flow evaluation with the visualization tool

- 7229

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Experimentelle Untersuchung einer Strahlpumpe zum Entleeren von Gasflaschen

- Es soll untersucht warden, bis zu welchem Druck Gasflaschen entleert warden können bei einem Gegendruck von 20 bar, wenn eine weitere Gasflasche (300 bar) als Treibgas für eine Strahlpumpe verwendet wird.

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