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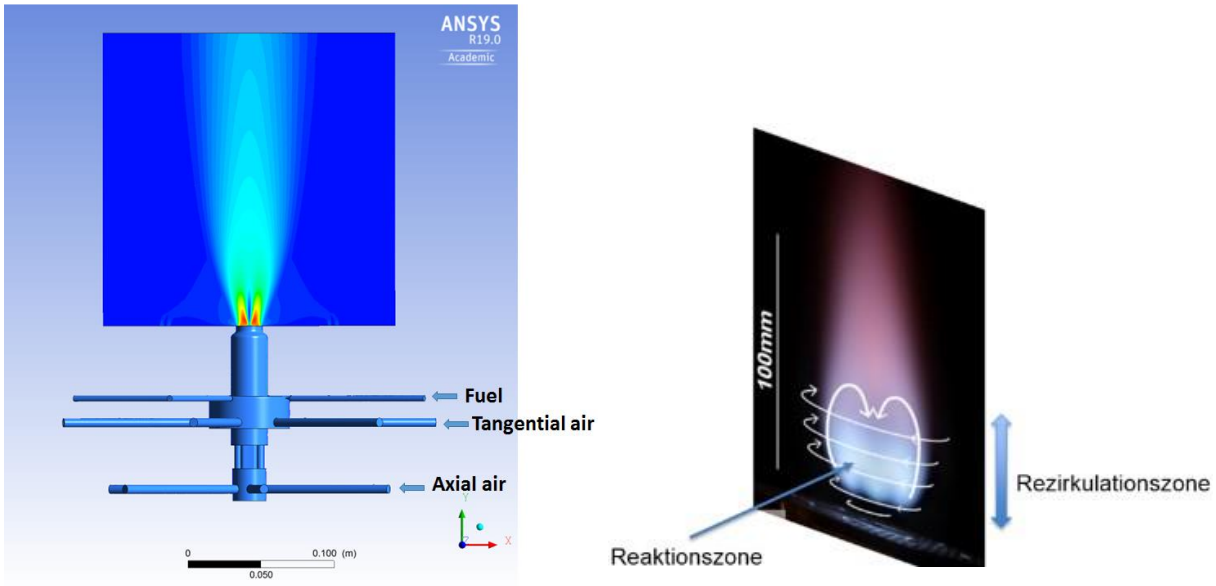
Master Thesis Task Description

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

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

The main aim of this thesis is to perform numerical simulations of the swirl-stabilized methane-fired burner using the CFD software CONVERGE, applying realistic boundary conditions for the flow. The ability and performance of the different combustion models will be compared and validated against experimental data.

The numerical results will be presented and compared to experiments in order to test the validity of both approaches for the chosen geometry.



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