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Our Research group  
**Ventiltechnik und Mechatronik**

offers

## Diploma-/ Master Thesis

with the topic

# Cavitation Modeling for Fluid Power



Cavitation is a phenomenon, which can occur in fluid power components, like pumps and valves, when the local pressure is below the saturation pressure (vapor cavitation) or when some gas is released from the oil (gas cavitation). It leads to damage the system components as well as to a decrease in system efficiency. Nowadays, the CFD design approach in industrial framework requires a reliable cavitation model for fluids especially for mineral oil. In a cavitation project at IFAS and in collaboration with VDMA, we are developing such a model in OpenFoam. This model will be implemented in the commercial software such as ANSYS and maybe will contribute to the OpenFOAM's release as well. The vapor cavitation with different mass transfer models is already included. The aim of the thesis is to implement a gas cavitation model and assess it for oil hydraulic testcases. Thermal effects must be included in this model.

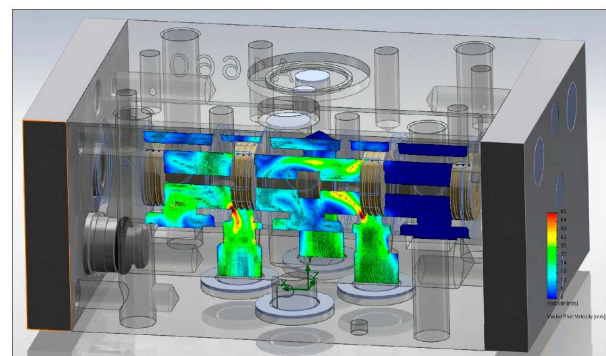
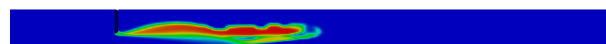
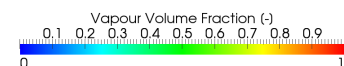
### Requirements:

- Fluid Dynamic and CFD knowledge
- Good knowledge of C++ programming language
- Ability to work by yourself

### We offer to you:

- Good work atmosphere
- Good supervision

If you are interested in this master thesis, do not hesitate to contact me:  
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Source: Fluid Power 2 Lectures, Torino, 2011