2009-05-18

# Husqvarna AB Master Thesis Proposal

## *CFD – Stratified charge scavenging computations in two-stroke engines with OpenFOAM*

### Background

The CFD group at Husqvarna AB is working with engine cooling and in-cylinder flows of outdoor products such as chain-saws and clearing-saws. The group also works with rotating blades in lawnmovers and other flow-related problems in the Husqvarna product range. Until recently these computations has been made with commercial codes but now OpenFOAM is used as a compliment for some applications, primarily due to cost-reduction. The group aims at expanding the use of OpenFOAM for more flow-related problems.

### Description of the thesis work

Make it possible to solve transient flow problems inside a two-stroke engine with OpenFOAM. The main purpose of the computation is to reduce the emissions. The calculations should include moving/deforming mesh, sliding interfaces and multiple phases. Validation data is available from commercial CFD code and 1D-engine code calculations and to some extent from experiments.

### Suitable student background

Good knowledge in fluid mechanics and CFD.

### Starting date

During fall of 2009

### Contacts


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