OPEN SOURCE CFD METHODOLOGY, RESEARCH & INDUSTRIAL APPLICATIONS

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The maturity of open source CFD software opens up new avenues for an efficient implementation of tailored simulation tools for specific industrial applications integrated into a fast paced engineering design environment. However, securing efficient, repetitive and robust CFD workflows, deployed in parallel at large scale, can often be demanding and pose several challenges.
A few recent industrial applications are presented and their corresponding main challenges discussed. In particular, future needs for the development of more efficient algorithms for handling of CAD data and CFD meshing as well as in situ visualization and post-processing of large data sets are emphasized.
Furthermore, the broad involvement from Creo Dynamics in collaborative research activities is being highlighted.

Torbjörn Larsson has more than 25 years of industrial experience from fluid mechanics and CFD and was one of the main driving forces for introducing CFD and HPC on a large scale in Formula One during the early 2000s. He was instrumental in building up the CFD department at the Sauber Petronas F1 team where he was responsible for the introduction of openFOAM in 2007. For more than a decade he steered the CFD teams at Sauber, BMW and Ferrari to much success in Formula 1.