

# Large eddy simulation of a spark-ignition engine

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**17.12.2009** 17:30

**Auditoire B02** Campus Kirchberg

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The combustion process in spark-ignited engines depends strongly on the mixing and turbulent fluctuations of the flow field during the ignition and combustion of the premixed fuel. Recent computations of these flows with large eddy simulation (LES) indicate a better prediction compared to unsteady Reynolds averaged Navier-Stokes methods (uRANS). The investigated engine was a modified Rotax one-cylinder four-valve engine.

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***Franco Magagnato** studied mechanical and aerospace engineering at Darmstadt before joining Dornier in 1987 where he developed a code for transonic and supersonic applications. In 1993 he became a senior researcher at the Centre for Research and Development for CFD in Cagliari, Italy. He received his PhD from the University of Darmstadt in 1995 when he also joined the University of Karlsruhe, where he later became the head of the computational fluid dynamic group in the Institute of Fluid Machinery. His main interest lies in the research of new physical and numerical models for large eddy simulation applied in various areas like turbo-machinery, automotive and aerospace aerodynamics and internal combustion engines. He is also the main developer of the CFD-code SPARC.*

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