



Research infrastructure

The Fluid Physics Laboratory has several high quality flow facilities as well as top of the line measurement equipment. The experimental studies comprise stability, transition and turbulence in boundary layer flows, fibre suspension flows related to paper manufacturing and compressible flow.

The Marcus Wallenberg Laboratory is the largest university centre in northern Europe for experimental work related to sound and vibration problems. The experimental facilities includes a sub-sonic aero-acoustic test rig, especially suited for experimental investigations of interior aero-acoustics.

The Centre has direct access to HPC facilities especially intended for CFD and climate simulations.

More information can be found at: www.flow.kth.se



Board members

Gunnar Landgren, KTH, Chairman
 Henrik Alfredsson, Mechanics
 Gustav Amberg, Mechanics
 Erik Lindborg, Mechanics
 Anna-Karin Tornberg, Numerical Analysis
 Mats Åbom, MWL
 Birgitta Palmberger, Energimyndigheten
 Gunnar Svedberg, STFI
 Erland Källén, MISU



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*a KTH centre of excellence
 financed by the Swedish
 Research Council (VR)*

Our role

The role of the Linné FLOW Centre is to bring together and coordinate the fundamental fluid dynamics research performed by the partners. It will enable a strengthening of key areas as well as spearheading into new developing areas. In particular the long term nature of the funding will enable development of numerical and experimental tools, something very difficult in ordinary more short term projects.

Our activities

- » Seminar series and Linné visitors programme
- » Workshops, summerschools and international conferences
- » Project evaluation and follow-up activities
- » Leadership and career planning activities
- » Regular research group meetings

Who we are

The Linné FLOW Centre comprises:

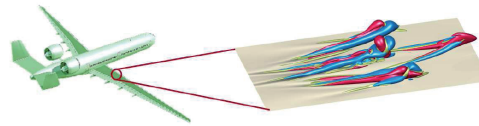
- » the Fluid Mechanics research groups of the Dept. of Mechanics, School of Engineering Sciences.
- » the Marcus Wallenberg Laboratory for Sound and Vibration, School of Engineering Sciences.
- » the Numerical Analysis group (NA), School of Computer Science and Communication.

Researchers in the Linné FLOW Centre also have strong connections to other centres at KTH and to other prominent fluid mechanics groups worldwide.

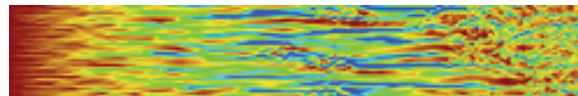
The total research funding to the centre is about 30 million Swedish crowns per year.

Examples of research activities

From optimization and control theory to laminar flow control on Airbus wings

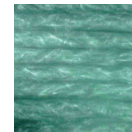


From transient growth theory to understanding and modeling of laminar-turbulent transition in turbo-machinery flows



From modern turbulence simulations and experiments to accurate and efficient models of turbulent flow

From Kolmogorov theories to fluid mechanics of climate change



Sound generation and scattering in ducts with applications to low Mach number flows

Fluid motion in free boundary problems involving phase change, surface tension effects and thermo-capillary flows



Development of accurate and innovative numerical methods

Background

Kick-off January 2007

The Linné FLOW Centre at KTH started in January 2007 and is one of 20 original centers of excellence set up by the Swedish Research Council (VR), as the result of a highly competitive process with international evaluation.

Vision

Our vision is to be...

"...an outstanding environment for fundamental research in fluid mechanics, where innovative research is born and future research leaders are fostered".

The vision is realized by

Collaborative research projects integrating experiments, computations and theory

Combining expertise in stability and transition, flow control, turbulence and geophysical flows, micro-fluid flows, aero-acoustics and numerical analysis

Outreach and network activities such as seminars, workshops, summer-schools and guest researcher programs

Actively incorporating junior faculty members in positions of responsibility and leadership.