

The 2008 DCAMM Annual Seminar Speaker

William K. George

Professor

**Turbulence Research Laboratory, Department of Applied Mechanics
Chalmers University of Technology, 412 96 Gothenburg, Sweden
E-mail: wkgeorge@chalmers.se**

Thursday, December 11th, at 13:00

in auditorium 1.208, Fibigerstræde 16, Aalborg Universitet, 9220 Aalborg

Tuesday, December 16th, at 15:00-16:00

in auditorium 72, Building 421, DTU - Vagn Aa. Jeppesens Vej, 2800 Kgs. Lyngby

The lecture is directed at an audience of graduate students, Ph.D. students and staff, and engineers from outside, with an interest in applied mechanics, physics and mathematics.

A four decade quest for the elusive turbulent jet

Abstract:

I will describe, hopefully with some humor, my nearly 40 year quest to understand turbulent jets. I'll start with the early attempts of my students and colleagues in the 1970's at CFD, which could never seem to both conserve momentum and agree with the jet data. All of which led to the obvious conclusion from the many experiments of the previous three decades that Newton was clearly wrong, and that r (i.e., force really did equal only one-half mass times acceleration). Then I'll review the ensuing 15 year battle with the turbulence community (most of whom failed to see the humor and absurdity in this) to overcome their rationalizations and convince them that it really was not unreasonable to ask that proper measurements should conserve momentum, and to identify the sources of the problem. And finally I'll trace the attempts of me and my collaborators over the past two decades to design experiments using the rapidly evolving optical and digital technology for the purpose of actually understanding what the flow in a jet was doing, the latest incarnations of which are the experiments currently underway at DTU. My personal jet saga will

probably be recognized by senior investigators as representative of scientific investigations their own fields, but more importantly might serve as a model for the young investigator of the importance of perseverance. Or perhaps for all, only another example of the difficulties and futility of taking on the entire world.

There will be a reception after the lecture.

Everyone is welcome!

The Danish Centre for Applied Mathematics and Mechanics, DCAMM is a framework for internationally oriented scientific collaboration between staff members at a number of departments at the Technical University of Denmark and Aalborg University. One of the DCAMM activities is its International Graduate Research School, which is funded in part by the Danish Agency for Science, Technology, and Innovation. The "DCAMM Annual Seminar Speaker" is an initiative created to disseminate mechanics to a broader audience.

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