Yves Dubief
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PROFESSIONAL INTERESTS

Numerical methods and modeling in fluid mechanics, control of turbulence, vortex dynamics, non-Newtonian fluid mechanics

EDUCATION

June 2000.	Ph. D., Fluid Mechanics, Institut National Polytechnique de Grenoble, France. Started in October 1997. Supervisor: Prof. Lesieur. Subject: *Large eddy simulations of near-wall turbulence and separated flows*.
Sept. 1996.	D.E.A. (Diploma of Advanced Studies) in Fluid Mechanics and Transfer, INPG, France.
Sept. 1995.	Engineering degree in Industrial Fluid Mechanics. Ecole Nationale Supérieure d'Hydraulique et de Mécanique de Grenoble, INPG, Grenoble, France.

EXPERIENCE

September 2005-.	Assistant Professor, Mechanical Engineering Department
April 2002- .	Research associate at the Center for Turbulence Research. Scientific leader of the effort for the understanding and modelling of polymer drag reduction. Principal investigators for the project: Profs E. G. S. Shaqfeh, P. Moin, S. K. Lele. Project funded by DARPA.
Aug. 2000-Mar. 2001	Research associate at the University of Newcastle with Prof. Antonia and Prof. Djenidi. Development of solvers for compressible and incompressible flows and research in turbulence management.

PROFESSIONAL AFFILIATION AND AWARDS

- Ph.D. scholarship awarded by the CNRS (Bourse de Docteur Ingénieur). October 1997.
- Postdoctoral fellowship awarded by the Center for Turbulence Research (Stanford University/NASA Ames). May 2001- March 2002.
- American Physics Society

PEER-REVIEWED ARTICLES

1. *Advantages of using a power law in a low R_θ turbulent boundary layer*. L. Djenidi, Y. Dubief, and R. A. Antonia. *Expts. Fluids*, **22**, pp 348-350, 1997.
2. *The measurement of $\partial u/\partial y$ in a turbulent boundary layer over a riblet surface*. Y. Dubief, L. Djenidi, and R. A. Antonia. *Int. J. Heat and Fluid Flow*, **18**, pp 183-187, 1997.
3. *From two-point closures of isotropic turbulence to LES of shear flows*. M. Lesieur, P. Comte, Y. Dubief, E. Lamballais, O. Métais, and S. Ossia, *Flow, Turbulence and Combustion*. In press.
4. *On coherent-vortex identification*. Y. Dubief, and F. Delcayre. *J. of Turbulence*, **1**, 011, 2000. `http://jot.iop.org`
5. *Simulated polymer stretch in a turbulent flow using Brownian dynamics*. V. E. Terrapon, Y. Dubief, P. Moin, E. S. G. Shaqfeh, and S. K. Lele. *J. Fluid Mech.*, **504**, pp 61-71, 2004.
6. *On the coherent drag-reducing and turbulence-enhancing behaviour of polymers in wall flows*. Y. Dubief, C. M. White, V. E. Terrapon, E. S. G. Shaqfeh, P. Moin, and S. K. Lele. *J. Fluid Mech.*, **514**, pp 271-280, 2004.
7. *Numerical simulation of turbulent drag reduction using rigid fibres*. J. S. Paschkewitz, Y. Dubief, C. D. Dimitropoulos, E. S. G. Shaqfeh, and P. Moin. *J. Fluid Mech.*, **518**, pp 281-317, 2004
8. *Direct numerical simulation of polymer-induced drag reduction in turbulent boundary layer flow*. C. D. Dimitropoulos, Y. Dubief, E. S. G. Shaqfeh, P. Moin, and S. K. Lele *Phys. Fluids*, **17**, 011705, 2005.

9. *New answers on the interaction between polymers and vortices in turbulent flows*. Y. Dubief, V. E. Terrapon, C. M. White, E. S. G. Shaqfeh, P. Moin, and S. K. Lele. *Flow, Turbulence and Combustion*. To appear, 2005.

10. *The dynamic mechanism for turbulent drag reduction using rigid fibers based on Lagrangian conditional statistics* J.S. Paschkewitz, Y. Dubief, E.S.G. Shaqfeh *Phys. Fluids*. **17**, 063102, 2005

PEER REVIEWED CONFERENCE PROCEEDINGS

1. *Large eddy simulation of a boundary layer flow passing over a groove*. Y. Dubief and P. Comte. *11th Symposium on Turbulent Shear Flows*, Grenoble, France, September 8-10, pp 1.1-1.6, 1997.

2. *Vortex dynamics studied with large eddy simulations*. Y. Dubief, F. Delcayre, O. Métais, M. Lesieur and P. Comte. *13th U.S. National Congress of Applied Mechanics*, University of Florida, Gainesville, Florida, June 21-26, 1998.

3. *Effects of a groove on the near-wall structure of turbulent boundary layer flows*. Y. Dubief, P. Comte and M. Lesieur. *13th Australasian Fluid Mechanics Conference*, Monash University, Melbourne, Australia, December 13-18, pp 495-498, 1998.

4. *Couches limites turbulentes pertubées par des rugosités de type d*. Y. Dubief, P. Comte and M. Lesieur. *14ème Congrés Français de Mécanique*, Toulouse, France, August 30-September 3, 1999.

5. *Numerical study of wall-bounded turbulence over d-type roughness*, Y. Dubief, P. Comte and M. Lesieur. *1st International Symposium on Turbulence and Shear Flow Phenomena*, Santa Barbara, California, September 12-15, 1999.

6. *Numerical simulation of high drag reduction regime in polymer solutions*, Y. Dubief, C. M. White, V. E. Terrapon, E. S. G. Shaqfeh, S. K. Lele and P. Moin. *2003 4th ASME-JSME Joint Fluids Enigneering Conference*, Honolulu, Hawaii, July 6-12, 2003. Keynote speech.

RESEARCH REPORTS

1. *Direct numerical simulation of polymer flow*. Y. Dubief and S. K. Lele. *Annual Research Briefs 2001*, Center for Turbulence Research, Stanford, California, December 2001.

2. *Numerical simulation of turbulent polymer solutions*. Y. Dubief. *Annual Research Briefs 2002*, Center for Turbulence Research, Stanford, California, December 2002.

3. *Numerical simulation of high drag reduction in a turbulent channel flow with polymer additives*. Y. Dubief. *Annual Research Briefs 2003*, Center for Turbulence Research, Stanford, California, December 2003.

4. *A turbulence model for polymer flows*. Y. Dubief, G. Iaccarino and S. Lele *Annual Research Briefs 2004*, Center for Turbulence Research, Stanford, California, December 2004.

5. *Hartmann effect on MHD turbulence in the limit $Re_m \ll 1$*. R. Moreau, Y. Dubief and B. Knaepen. *Proceedings of the 2004 Summer Program*, Center for Turbulence Research, Stanford, California, July 2004.

REVIEWER

Journal of Fluid Mechanics (10), Physics of Fluids (4), Journal of Non-Newtonian Fluid Mechanics (3), Experiments in Fluids (3), Journal of Computational Physics (1)