

PUBLICATION LIST OF PROF. DOMINIQUE THEVENIN
(NOVEMBER 2004, ONLY accepted papers)

International Journals

- THÉVENIN, D., “Three-dimensional direct simulations and structure of expanding turbulent methane flames”, *Proceedings of the Combustion Institute*, Vol.**30**, pp.629-637 (2005).
- HILBERT, R. & THÉVENIN, D., “Influence of differential diffusion on maximum flame temperature in turbulent non-premixed hydrogen/air flames”, *Combustion and Flame*, Vol.**138**, pp.175-187 (2004).
- HILBERT, R., TAP, F., EL-RABII, H. & THÉVENIN, D., “Impact of detailed chemistry and transport models on turbulent combustion simulations”, *Progress in Energy and Combustion Science*, Vol.**30**, pp.61-117 (2004).
- TAP, F., HILBERT, R., THÉVENIN, D. & VEYNANTE, D., “A generalized flame surface density modelling approach for the auto-ignition of a turbulent non-premixed system”, *Combustion Theory and Modelling*, Vol.**8**, pp.165-193 (2004).
- DE PERSIS, S., TEYSSANDIER, F., THÉVENIN, D. & DARABIHA, N., “Classical and dynamic analysis of gas phase reactivity: influence of carbon precursor in the CVD of SiC”, *Journal of the Electrochemical Society*, Vol.**151**/4, 236-244, (2004).
- LAVERDANT, A. & THÉVENIN, D., “Interaction of a gaussian acoustic wave with a turbulent premixed flame”, *Combustion and Flame*, Vol.**134**, pp.11-19, (2003).
- FIORINA, B., BARON, R., GICQUEL, O., THÉVENIN, D., CARPENTIER, S. & DARABIHA, N., “Modelling non-adiabatic partially premixed flames using flame-prolongation of ILDM”, *Combustion Theory and Modelling*, Vol.**7**, pp.449-470 (2003).
- THÉVENIN, D., GICQUEL, O., DE CHARENTENAY, J., HILBERT, R. & VEYNANTE, D., “Two-versus three-dimensional direct simulations of turbulent methane flame kernels using realistic chemistry”, *Proceedings of the Combustion Institute*, Vol.**29**, pp.2031-2039 (2003).
- HILBERT, R., TAP, F., VEYNANTE, D. & THÉVENIN, D., “A new modeling approach for the autoignition of a nonpremixed turbulent flame using DNS”, *Proceedings of the Combustion Institute*, Vol.**29**, pp.2079-2085 (2003).
- DE CHARENTENAY, J., THÉVENIN, D. & ZAMUNER, B., “Comparison of direct numerical simulations of turbulent flames using compressible or low-Mach number formulations”, *International Journal for Numerical Methods in Fluids*, **39**, 6, pp.497-516, (2002).
- HILBERT, R. & THÉVENIN, D., “Autoignition of turbulent non-premixed flames investigated using direct numerical simulations”, *Combustion and Flame*, **128**, 1-2, pp.22-37, (2002).

- GICQUEL, O., DARABIHA, N. & THÉVENIN, D., “Laminar premixed hydrogen/air counterflow flame simulations using Flame Prolongation of ILDM with differential diffusion”, *Proceedings of the Combustion Institute*, Vol.**28**, pp.1901-1908 (2000).
- GICQUEL, O., MIQUEL, P., QUILICHINI, V., HILKA M., THÉVENIN, D. & DARABIHA, N., “Numerical and experimental study of NO emission in laminar partially-premixed flames”, *Proceedings of the Combustion Institute*, Vol.**28**, pp.2419-2425 (2000).
- THÉVENIN, D., RENARD, P.H., FIECHTNER, G.J., GORD, J.R. & ROLON, J.C., “Regimes of nonpremixed flame/vortex interaction”, *Proceedings of the Combustion Institute*, Vol.**28**, pp.2101-2108 (2000).
- RENARD, P.H., THÉVENIN, D., ROLON, C. & CANDEL, S., “Dynamics of flame/vortex interactions”, *Progress in Energy and Combustion Science*, **26**, 3, pp.225-282 (2000).
- CANDEL, S., THÉVENIN, D., DARABIHA, N. & VEYNANTE, D., “Progress in numerical combustion”, *Combustion Science and Technology*, **149**, pp.297-337 (1999).
- GICQUEL, O., THÉVENIN, D., HILKA, M. & DARABIHA, N., “Direct numerical simulation of turbulent premixed flames using intrinsic low-dimensional manifolds”, *Combustion Theory and Modelling*, **3**(3), pp.479-502 (1999).
- MAHALINGAM, S., THÉVENIN, D., CANDEL, S. & VEYNANTE, D., “Analysis and direct simulation of a non-premixed flame in a corner”, *Combustion and Flame*, **118**, pp.221-232, (1999).
- RENARD, P.H., ROLON, J.C., THÉVENIN, D. & CANDEL, S., “Investigations of heat release, extinction, and time evolution of the flame surface, for a non-premixed flame interacting with a vortex”, *Combustion and Flame*, **117**, 189-205 (1999).
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- RENARD, P.H., ROLON, J.C., THÉVENIN, D. & CANDEL, S., “Wrinkling, pocket formation and double premixed flame interaction processes”, *Proceedings of the Combustion Institute*, Vol.**27**, pp.659-666 (1998).
- THÉVENIN, D., BEHRENDT, F., MAAS, U., PRZYWARA, B. & WARNATZ, J., “Development of a parallel direct simulation code to investigate reactive flows”, *Computers and Fluids*, **25**, 5, pp.485-496, (1996).
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International Conferences with Review Committee and Proceedings

- ÖNCÜL, A.A., THÉVENIN, D., ELSNER, M.P. & SEIDEL-MORGENSTERN, A., “Numerical analysis of the preferential crystallization of enantiomers”, *11th Workshop on Two-Phase Flow Predictions*, Halle, Germany, accepted for presentation, (2005).
- JANIGA, G., ZÄHRINGER, K. & THÉVENIN, D., “Automatic optimization of two-dimensional burners”, *European Combustion Meeting ECM2005*, Louvain, Belgium, accepted for presentation, (2005).
- THÉVENIN, D., “Three-dimensional computations of laminar flames using detailed models for chemistry and transport”, Proceedings, *10th International Conference on Numerical Combustion*, Sedona, Arizona, p.43, (2004).
- DE CHARENTENAY, J., THÉVENIN, D. & HILBERT, R., “Analysis of the stabilization processes of detached non-premixed jet flames”, Proceedings, *European Combustion Meeting ECM2003*, Orléans, France, pp.132/1-132/6, (2003).
- HILBERT, R. & THÉVENIN, D., “Influence of transport model on hydrogen/air turbulent non-premixed flames”, Proceedings, *European Combustion Meeting ECM2003*, Orléans, France, pp.161/1-161/6, (2003).
- HILBERT, R. & THÉVENIN, D., “Direct numerical simulation of turbulent non-premixed flames”, *5th ERCOFTAC Workshop on Direct and Large-Eddy Simulation*, Munich, Germany, pp.90-91 (2003).
- EL-RABII, H., THÉVENIN, D. & ROLON, J.C., “Time-resolved planar laser-induced fluorescence of laser ignition of a methane/air mixture”, *34th AIAA Plasmadynamics and Lasers Conference*, Orlando, Florida, AIAA Paper 2003-3476, (2003).
- THÉVENIN, D., GICQUEL, O. & HILBERT, R., “Turbulent premixed flames investigated using direct numerical simulations and reduced chemistry”, Proceedings, *9th International Conference*

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- TAP, F., HILBERT, R., VEYNANTE, D. & THÉVENIN, D., “Modeling the autoignition of a nonpremixed turbulent flame using DNS data”, *9th International Conference on Numerical Combustion*, Proceedings, Sorrento, Italy, pp.403-404, (2002).
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- GICQUEL, O., THÉVENIN, D. & DARABIHA, N., “Validation of a new chemistry reduction method for partially-premixed laminar methane/air flames”, Proceedings, *18th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDEERS)*, Seattle, Washington, pp.018/1-018/5 (2001).
- BARON, R., PAXION, S. & THÉVENIN, D., “Fast and accurate flame computations using detailed chemistry and transport”, Proceedings, *18th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDEERS)*, Seattle, Washington, pp.036/1-036/5 (2001).
- EMBOUAZZA, M., GICQUEL, O., THÉVENIN, D. & DARABIHA, N., “Using a new kinetic reduction technique inside Fluent to compute pollutant emissions in a domestic burner”, Proceedings, *Third International Symposium on Computational Technologies for Fluid/Thermal/Chemical Systems with Industrial Applications*, Atlanta, USA, pp.187-198 (2001).
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- PAXION, S., THÉVENIN, D., GORDNER, A., BARON, R. & BASTIAN, P., “Detailed computations of laminar reactive flows using multigrid methods on parallel computers”, *First International Conference on Computational Fluid Dynamics*, Kyoto, Japan, (2000).
- DE CHARENTENAY, J., ZAMUNER, B. & THÉVENIN, D., “Vortex influence on a lifted hydrogen-air diffusion flame”, Proceedings, *8th International Conference on Numerical Combustion*, Amelia Island, Florida, p.33, (2000).
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- THÉVENIN, D. & CANDEL, S., “Investigation of turbulent diffusion flames using parallel computers”, Proceedings, *6th International Conference on Numerical Combustion*, New Orleans, Louisiana, p.195, (1996).
- THÉVENIN, D., BEHRENDT, F., MAAS, U. & WARNATZ, J., “Parallel direct simulation of two-dimensional flows with detailed chemistry”, Proceedings, *5th International Conference on Numerical Combustion*, Garmisch-Partenkirchen, Germany, p.121, (1993).
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- DURST, F., MARTINUZZI, R., SENDER, J. & THÉVENIN, D., “LDA measurements of mean velocity, RMS values and higher order moments of turbulence intensity fluctuations in flow fields

with strong velocity gradients”, Proceedings, *6th International Symposium on Applications of Laser Techniques to Fluid Mechanics*, Lisbon, (1992).

- THÉVENIN, D. & CANDEL, S., “Numerical simulation of the ignition of a diffusion flame rolled-up in a vortex”, Proceedings, *4th International Conference on Numerical Combustion*, St. Petersburg, Florida, p.212, (1991).

Edited Books

- THÉVENIN, D., “Simulation of three-dimensional turbulent flames”, in *Direct and Large-Eddy Simulation V*, (Friedrich, R., Geurts, B.J., and Métais, O., Eds.), Kluwer Academic Publishers, pp.335-342, (2004).

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- DE CHARENTENAY, J., THÉVENIN, D. & ZAMUNER, B., “Simulation of a buoyancy-driven jet diffusion flame”, Proceedings, *IUTAM Symposium on Turbulent Mixing and Combustion*, (Pollard, A. and Candel, S., Eds), Kluwer Academic Publishers, pp.287-294 (2002).

- GICQUEL, O., HILBERT, R., THÉVENIN, D. & DARABIHA, N., “Influence of differential diffusion on local equilibrium and super-adiabatic combustion in turbulent non-premixed flames”, Proceedings, *IUTAM Symposium on Turbulent Mixing and Combustion*, (Pollard, A. and Candel, S., Eds), Kluwer Academic Publishers, pp.149-160 (2002).

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- DE CHARENTENAY, J., THÉVENIN, D. & ZAMUNER, B., “Direct numerical simulation of turbulent H₂/O₂ premixed flames using compressible and low-Mach formulations”, in *Direct and Large Eddy Simulation IV*, (Geurts, B.J., Friedrich, R. and Métais, O., Eds.), Kluwer Academic Publishers, pp.129-136, (2001).
- PAXION, S., BARON, R., GORDNER, A., NEUSS, N., BASTIAN, P., THÉVENIN, D., & WITTUM, G., “Development of a parallel unstructured multigrid solver for laminar flame simulations with detailed chemistry and transport”, Notes on Numerical Fluid Mechanics, Vieweg Verlag, *in press* (2001).
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- PAXION, S., THÉVENIN, D., BASTIAN, P. & CANDEL, S., “Using multigrid methods for the computation of reactive flows at low Mach numbers”, in *Sixteenth International Conference on Numerical Methods in Fluid Dynamics*, (Bruneau, C.H., Ed.), Lecture Notes in Physics **515**, Springer-Verlag, pp.536-541, (1998).
- LANGE, M., THÉVENIN, D., RIEDEL, U. & WARNATZ, J., “Direct numerical simulation of turbulent reactive flows using massively parallel computers”, in *Parallel Computing: Fundamentals, Applications and New Directions*, (D’Hollander, E.H., Joubert, G.R., Peters, F.J. and Trottenberg, U., Eds.), Advances in Parallel Computing **12**, Elsevier, pp.287-295, (1998).
- THÉVENIN, D., VAN KALMTHOUT, E. & CANDEL, S., “Two-dimensional direct numerical simulations of turbulent diffusion flames using detailed chemistry”, in *Direct and Large Eddy Simulation II*, (Chollet, J.P., Voke, P.R. and Kleiser, L., Eds.), Kluwer Academic Publishers, pp.343-354, (1997).
- THÉVENIN, D., THIBAUT, D., PIANA, J., VEYNANTE, D. & CANDEL, S., “Progress in direct and large-eddy simulations of turbulent combustion”, in *Computation and Visualization of Three-Dimensional Vortical and Turbulent Flows*, (Friedrich, R. and Bontoux, P., Eds.), Notes in Numerical Fluid Mechanics, **64**, Vieweg Verlag, pp.263-275, (1997).
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- CANDEL, S., THÉVENIN, D., DARABIHA, N. & VEYNANTE, D., “Problems and perspectives in numerical combustion”, in *Computational Fluid Dynamics ’96*, (Désidéri, J.A., Hirsch, C., Le Tallec, P., Oñate, E., Pandolfi, M., Périaux, J. and Stein, E., Eds.), John Wiley & Sons, pp.48-62 (1996).

- RIEDEL, U. & THÉVENIN, D., “Development of a three-dimensional code to investigate supersonic-combustion problems”, Proceedings, *IUTAM Symposium on Combustion in Supersonic Flows*, (Champion, M. and Deshaies, B., Eds.), Kluwer Academic Publishers, pp.43-50, (1996).
- THÉVENIN, D., BEHRENDT, F., MAAS, U. & WARNATZ, J., “Simulation of reacting flows with a portable parallel code using dynamic load-balancing”, Proceedings, *High-Performance Computing and Networking Europe '95*, (Hertberger, B. and Serrazi, G., Eds.), Lecture Notes in Computer Science **919**, Springer-Verlag, pp.378-383, (1995).
- THÉVENIN, D., BAUM, M., & POINSOT, T., “Description of accurate boundary conditions for the simulation of reactive flows”, in *Direct Numerical Simulation for Turbulent Reacting Flows*, (Poinsot, T., Baritaud, T. and Baum, M., Eds.), Ed. Technip, pp.11-32 (1996).
- THÉVENIN, D., BEHRENDT, F., MAAS, U. & WARNATZ, J., “Parallel simulation of reacting flows using detailed chemistry”, Proceedings, *High-Performance Computing and Networking in Europe 1994*, (Gentsch, W. and Harms, U., Eds.), Lecture Notes in Computer Science **796**, Springer-Verlag, pp.125-131, (1994).

Invited Presentations and selected seminars

- THÉVENIN, D., “Structure of turbulent flames revealed by Direct Numerical Simulations”, invited presentation, *Second International Workshop on Trends in Numerical and Physical Modelling for Turbulent Processes in Gas Turbine Combustors*, Heidelberg, pp.149-158 (2004).
- THÉVENIN, D., “Impact of detailed models for chemistry and transport on DNS of combustion”, invited presentation, *COCCFEA Conference on DNS of Combustion*, Imperial College, London, (2004).
- THÉVENIN, D., “Simulation of three-dimensional turbulent flames”, invited presentation, *5th ERCOFTAC Workshop on Direct and Large-Eddy Simulation*, Munich, pp.67-68 (2003).
- THÉVENIN, D., “Instationäre Beeinflussung einer Flamme”, invited presentation, *DFG-Expertengespräch über instationären Strömungen*, Erlangen, Germany (2003).
- THÉVENIN, D., “Direct simulations of three-dimensional turbulent premixed flames”, invited presentation, *2nd MIT Conference on Computational Fluid and Solid Mechanics*, Cambridge, Massachusetts, CD-ROM ISBN 0-08-044047-9 (2003).
- THÉVENIN, D., “Direct- and Large-Eddy Simulations of turbulent flames”, invited presentation, *5th World Congress on Computational Mechanics (WCCM V)*, Vienna, Austria, p.I-395, CD-ROM ISBN 3-9501554-0-6 (2002).
- THÉVENIN, D., “Recent progress in the numerical simulation of reacting flows”, invited presentation, *US Air Force Combustion Research Laboratory*, Dayton, Ohio (2000).
- THÉVENIN, D., EMOUZZA, M., GICQUEL, O. & DARABIHA, N., “Comment représenter au mieux les processus chimiques ?”, invited presentation, *Rencontre des Utilisateurs de Fluent*

France, Paris, France, (2000).

- THÉVENIN, D., GICQUEL, O. & DARABIHA, N., “Chemistry reduction using Intrinsic Low-Dimensional Manifolds”, invited presentation, *Ecole Normale Supérieure*, Paris, France, (2000).
- THÉVENIN, D., “Direct numerical simulation for combustion applications”, invited presentation, *Ecole Nationale des Ponts et Chaussées*, Noisy Le Grand, France, (2000).
- THÉVENIN, D., “Detailed numerical simulations of turbulent combustion”, invited presentation, *Parallele numerische Simulation von Flammen*, Bad Herrenalb, Germany, (2000).
- THÉVENIN, D., “Principaux phénomènes physiques en Mécanique des Fluides”, invited presentation, *Institut pour la Promotion des Sciences de l’Ingénieur*, Paris, (1999).
- CANDEL, S., THÉVENIN, D., DARABIHA, N. & VEYNANTE, D., “Progress in numerical combustion”, invited presentation, *EUROTHERM Seminar on Detailed Studies of Combustion Phenomena*, 's-Hertogenbosch, The Netherlands, (1998).
- THÉVENIN, D. & CANDEL, S., “Analysis of lift-off and blow-off processes in flames”, *Journée d’études sur la Stabilisation des Flammes, GDR Combustion Propre*, Châtenay-Malabry, (1997).
- THÉVENIN, D., “Direct Numerical Simulation for combustion problems”, invited presentation, *Institut für Technische Verbrennung*, Universität Stuttgart, (1997).
- THÉVENIN, D., “L’ingénieur mécanicien en France : intérêt de la formation par la recherche et du modèle allemand”, invited presentation, *Journée de réflexion organisée par l’ANAE et le GIFAS*, École Militaire, Paris, december 1996, published in *L’évolution de l’emploi et de la formation dans le domaine aéronautique et spatial*, Cépaduès-éditions, pp.41-46, (1997).
- THÉVENIN, D., POINSOT, T. & CANDEL, S., “Direct numerical simulations for combustion applications”, invited presentation, *1996 Colloque du Groupement de Recherches sur la Mécanique des Fluides Numérique*, Poitiers, (1996).
- THÉVENIN, D. & DARABIHA, N., “Reducing the chemistry for direct numerical simulation of reacting flows”, invited presentation, *CRCT Meeting '96*, Centre de Recherche sur la Combustion Turbulente, Châtenay-Malabry, (1996).
- THÉVENIN, D., “Direct numerical simulation and detailed chemistry using intrinsic low-dimensional manifolds”, invited presentation, Conference on *Direct Numerical Simulation of Combustion*, Centre de Recherche sur la Combustion Turbulente et Groupe de Recherche Mécanique des Fluides Numérique, Rueil-Malmaison, (1994).

Other Journals

- LAVERDANT, A. & THÉVENIN, D., “Direct numerical simulation of a gaussian acoustic wave interaction with a turbulent premixed flame”, *Comptes-Rendus de l’Académie des Sciences* –

Mécanique, Vol.**331**, in press, (2004).

- THÉVENIN, D., HILBERT, R. “Drei-dimensionale Berechnung von Haushaltsbrennern anhand detaillierter Reaktionsmechanismen”, *VDI Berichte*, **1750**, pp.615-616 (2003).
- DANIEL, C., BORRERO, V., DE LA CRUZ, M., BELHALFAOUI, S., THÉVENIN, D. & LACAS, F., “Analysis of electrical potentials in flames”, *Comptes-Rendus de l’Académie des Sciences, Série II – Mécanique*, **329**, pp.53-59 (2001).
- CANDEL, S., VEYNANTE, D., FICHOT, F. & THÉVENIN, D., “Modélisation de problèmes d’allumage”, *Images des Mathématiques*, pp.109-117, (1996).

Other Conferences

- JANIGA, G. & THÉVENIN, D., “Coupling CFD/optimization for flows involving heat transfer and chemical reactions”, *Computational Methods for Multidimensional Flows*, Heidelberg, Germany, (2005).
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