AD 2000

From Simulation

to Optimization
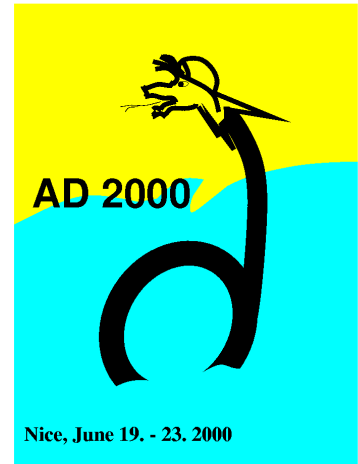
The 3rd International Workshop on Automatic Differentiation :

Nice, June 19. - 23. 2000

- ♦ **June 19th – 23rd 2000, Maison de Seminaire, Nice, Cote d'Azur, France**

- ♦ **Organized by INRIA Sophia-Antipolis, France**

- ♦ **Supported by UNSA, SIAM, GAMM, ECCOMAS, GDR (OCAF), CADOE, ERCIM, FRONTLINE SYSTEMS**
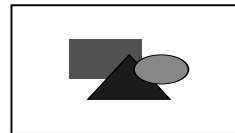
- ♦ **Theme and Objectives**

Automatic Differentiation (AD) is a chain-rule based technique for accurately and efficiently evaluating derivatives of functions defined by computer programs. The ability to calculate sensitivities of user specified (sub-)program output variables with respect to certain input variables is crucial for the systematic adjustment of model parameters and optimization of design variables. It may also be used in the numerical integration of stiff dynamical systems and for the rapid and robust solution of many other nonlinear computational tasks.

This conference will be the third in a series of international meetings devoted to Automatic Differentiation. The first took place in Breckenridge (1991) and the second meeting in Santa Fe (1996). During this period the mathematical techniques and software tools have progressed significantly with several systems for Fortran and C programs now being widely applied. Therefore, the first day will be dedicated to applications, featuring four invited presentations from industrial users and implementers, as well as an AD tutorial and hands-on demonstrations of software packages.

This Applications Day will be self-contained and should be of particular interest to potential industrial users. The registration fee is 200 Euros for the whole conference and 100 Euros for the Application Day. During the remaining four days the participants will discuss methods for further improvements, either based on mathematical research, or relying on synergies with software engineering, from compilers to parallelizers. The improvements concern run-time efficiency, storage reduction, user friendliness, and reliability on an ever expanding range of practical problems.

♦ Application day *[Mon, 19.06]*

- **Wolfram Klein**, Automatic Differentiation used in Simulation Systems (**Siemens**, Munich, Germany)
- **Vittorio Selmin**, The role of Sensitivity Analysis in Aircraft Design (**Alenia**, Torino, Italy)
- **Daniel H. Fylstra**, Automatic Differentiation in Microsoft Excel (**Frontline Systems**, Nevada, USA)
- **Jean-Daniel Beley**, Variational Analysis: A parametric Structural Analysis Software (**CADOE**, Lyon, France)
- **Steve Hague**, Present & Future Scientific Computation Environments (**NAG**, Oxford, UK)
- **Automatic Differentiation Systems Presentation**: COSY, MIPAD, ADIFOR, ADIC, Padre2, ADOL-C, TAMC, ADMIT, Odyssee, Hyperion, DAE-pack

♦ Other Invited Speakers

- **William Walster** *[Tue, 20.06]* (Sun Microsystems, USA)
- **Francois Bodin** *[Tue, 20.06]* (Institut de Recherche en Informatique et Systemes Aleatoires, France)
- **Stephen Watt** *[Wed, 21.06]* (University of Western Ontario, Canada)
- **Jorge More** *[Thu, 22.06]* (Argonne National Laboratory, USA)
- **Olivier Pironneau** *[Thu, 22.06]* (Universite de Paris VI, France)
- **David Keyes** *[Fri, 23.06]* (NASA Langley Research Center, USA)
- **Francois-Xavier Le Dimet** *[Fri, 23.06]* (Universite Joseph Fourier, France)

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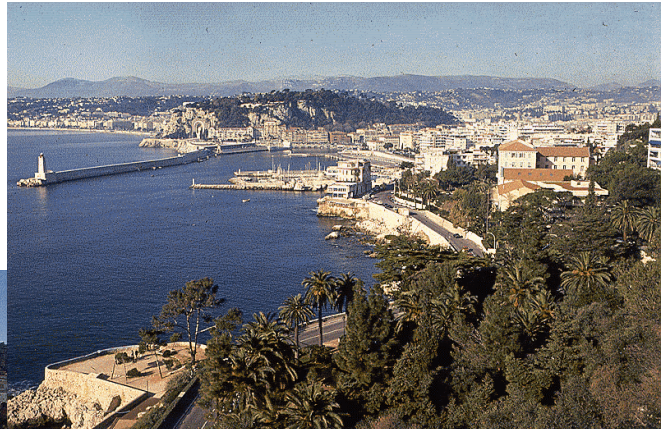
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or visit our website under

http://www-sop.inria.fr/tropics/ad2000/

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