



Austro - French Cooperation
CNRS - WPI & partner universities



Celebration of the 5th prolongation of the « Institut CNRS Pauli (ICP) »
International Research Laboratory, IRL 2842 du CNRS

**Pauli Symposium: "French perspectives in Austria:
Mathematics & Informatics for Science & Society"**



**9 jan 2026 at 16h , SkyLounge,
Oskar Morgensternplatz 1, 1090 Wien**

16h00 **Welcome:** Georg **Gottlob**, President WPI, logician-mathematician @ U. Calabria
Bruno **Ducluzaux**, Directeur Inst. Français d'Autriche
Stefan **Hanslik**, Ministry of Science - head STEM

16h09 **Introduction:** Norbert J. **Mausser**, Director WPI & ICP, mathematician @ U. Wien

16h30 **Talk1:** Adeline **Nazarenko**, Director Inst.Natl.CNRS_Informatics
„ New paradigms of computing ”

17h00 **Talk2:** Pierre-Louis **Lions**, ISB WPI, mathematician @ Collège de France
„On mathematics and AI”

17h40 **Statement1:** Bertrand **Georgeot**, Vice-Director Inst.Natl.CNRS Physics

17h45 **Statement2:** Thorsten **Schumm**, Vice-Director ICP, physicist @ TU Wien

17h50 **Statement3:** Antoine **Petit**, President-DirectorGeneral CNRS, informatician

17h55 Podium + Public **Discussion** (30 - 45 min)

18h25 **Closing Remarks**

18h30 – 20h00: **Reception** with drinks & buffet



Adeline Nazarenko



Short bio: Nazarenko studied at the École Normale Supérieure, earning an advanced teaching degree in contemporary literature and a doctorate in computer science with a thesis at the IBM France Scientific Centre. In 1996 she joined the Lab. d'Informatique de Paris Nord, operated jointly by CNRS and the Univ. Sorbonne Paris Nord. As a research team leader and director of the university's computer science department, she participated in various European projects and supervised the work of some 20 PhD students. A proponent of interdisciplinary dialogue, she played an active role in the creation and direction of the laboratory of excellence "Empirical Foundations of Linguistics", founded in 2011. Nazarenko specialises in the automatic processing of languages. Her research focuses on the semantic analysis of texts and information access methods. For the past decade she has concentrated on analysing legal texts in view of developing the legal semantic web. In 2016, Nazarenko joined the CNRS Informatics as deputy scientific director and in January 2022 launched the CNRS Mission for Scientific Expertise, heading its operations until her nomination as director of CNRS Informatics February 2023.

Title: New paradigms of computing

Abstract : After a brief presentation of the institute she heads, Nazarenko introduces the thematic focus of CNRS Informatics on "new computing paradigms". She gives a quick overview of both the challenges and the research currently underway in the laboratories and thematic networks affiliated with CNRS Informatics. These new computing paradigms are redefining the contours of contemporary computing. Between scientific challenges, technological challenges and applications in our societies, the presented focus highlights four approaches to computing that will permanently transform our relationship with digital technology: *frugal, quantum, molecular and neuromorphic computing*.

Pierre-Louis Lions



Short bio: PLL received his doctorate from the [Univ. Paris 6 "Pierre and Marie Curie"](#) in 1979, directed by H. Brezis. His large field of research interests around the theory of nonlinear [partial differential equations](#) ranges from (quantum) physics, fluid mechanics to math of economy and finance. PLL, together with R. DiPerna, was the first to prove global (renormalized) solutions to the [Boltzmann equation](#). In 1994 he received the [Fields Medal](#). Other awards he received include the IBM Prize in 1987 and the Philip Morris Prize in 1991. He is doctor honoris causa of Heriot-Watt Univ. and of the City Univ. of HongKong. He is a member of the Académie de sciences and Commandeur de la Légion d'Honneur. Currently, he holds the chair of [Partial differential](#)

[equations and their applications](#) at the [Collège de France](#) in Paris as well as a position at the [CEREMADE](#) at Univ. Paris 9 "Dauphine" and at [Ecole Polytechnique](#). Currently he is interested e.g. in "mean field games" (e.g. in „math finance“), and in „math behind AI“. His enormous impact on mathematics is enhanced by the school of his PhD students, starting from M. Esteban and B. Perthame and including C. Villani, his participation in European projects like the [HYKE network](#), and in boards both in industry and academic research, including the International Scientific Board of the WPI.

Title: On mathematics and AI

Abstract : In this talk, we address various issues concerning Machine Learning or AI. We first recall briefly the "history" of this field. Will follow an attempt to describe where we stand and some emerging trends. Next, we discuss the connections with various fields of mathematics and the reasons why one needs a better understanding of the topic and in particular a better mathematical understanding. Finally, we conclude with a short description of a potential mathematical approach.