

## Curriculum vitae Stavros Katsanevas

[Stavros.katsanevas@ego-gw.it](mailto:Stavros.katsanevas@ego-gw.it)

(May 2021)

### Biographical data

- Born in Athens in 1953. Married to Angelique Alexandratou.
- Nationalities: Greek and French.
- Languages spoken: French, English, Greek, Italian.
- Military Service: Greek Aviation 1986-1987



### Education

- PhD, Athens University 1985
- Doctorat 3<sup>e</sup> cycle, Ecole Polytechnique 1979
- DEA de Physique Théorique ENS, Paris VI-VII, Paris XII 1976
- Diploma of Physics, Athens University 1975

### Academic and Research Positions

- Professor Classe Exceptionnelle 2, Université Paris Denis Diderot 2013-
- Professor Classe Exceptionnelle 1, Université Paris Denis Diderot 2010-2013
- Professor 1<sup>st</sup> class, Université Paris VII, Denis Diderot 2004-2010
- Professor 1<sup>st</sup> class, Université de Lyon I Claude Bernard 2003-2004
- Professor 2<sup>nd</sup> class, Université de Lyon I Claude Bernard 1996-2003
- Associate Professor, Athens University 1989-1996
- Lecturer, Athens University 1982-1989

### Fellowships

- CERN, Corresponding fellow 1996
- CERN, Associate Scientist (leave of absence from Athens University) 1991-1992
- CERN, Fellow (leave of absence from Athens University) 1983-1986
- Fellow Greek Ministry of Research at Fermi National Laboratory 1979-1982
- Fellow French Ministry of Research (DGRST) at Ecole Polytechnique 1976-1979

### Awards, Distinctions

- Chevalier de l'Ordre National du Mérite 2011
- Physics Prize, Academy of Athens for work on supersymmetry 2000

### Positions of responsibility

#### Main positions

- (2018-2022) Director of the European Gravitational Observatory the Consortium CNRS/INFN/NIKHEF hosting the Virgo Gravitational wave antenna.
- (2014-2018) Director of the laboratory of Astroparticle Physics and Cosmology (APC) a Mixed Unit of Research (200 agents) of University Diderot (Paris 7), IN2P3/CNRS, CEA, and the Observatory of Paris.
- (2012-2014) Chairman of Astroparticle Physics European Coordination (APPEC). APPEC gathers 24 agencies from 19 European countries coordinating Astroparticle Physics in

Europe. Member of its Steering Committee since 2002. Elected chair in 2011 with the mandate to upgrade the Coordination scheme to a Consortium. The consortium was finally founded in June 2012. Elected its first chairman in November 2012.

- (2002-2012) Deputy scientific director (2002-2012) of IN2P3/CNRS. IN2P3 is the National Institute of Nuclear and Particle Physics in CNRS, managing 3000 researchers, technical and administrative personnel distributed in 20 laboratories across the country working on 40 large national and international projects and large infrastructures. In particular responsible of the Astroparticle Physics, Cosmology and Neutrino programs, concerning 15 large national and international (US, Japan, Italy, Argentina, South Africa) projects on ground, underground, underwater and space.

### In parallel

- (2016-2018) Coordinator (“préfigurateur”) of the cluster of Sciences and Engineering of the Community of Universities Sorbonne-Paris-Cité, including the Universities of Paris 3, 5, 7, 13, Institute of the Physics of the Globe, Sciences Politiques, Institut des Langues INALCO. In the context of this mission, responsible for the formulation of the interdisciplinary program spanning a series of disciplines (Biology, Chemistry, Physics, Informatics and Mathematics, Engineering Sciences).
- (2014-2018) Director of the « Fondation pour la Recherche et la Formation dans le domaine de la Physique de l’Univers » in relation with the « Paris Center of Cosmological Physics », president George Smoot.
- (2002-2011) Director of the CNRS interdisciplinary program “Particules et Univers”. The CNRS interdisciplinary program “Particules et Univers” issued annual R&D calls around the themes of Astroparticle physics and their synergies with geosciences, climate and biodiversity.

### Coordination of EU programs

- (2018-2022) Coordinator of the EU funded SWAFS Citizen Science REINFORCE
- (2006-2009) Proposer and Coordinator of the EU funded ERANET agency network ASPERA (« Astroparticle Physics European Research Area NETWORK»). ASPERA was funded by FP6 to advance the coordination of European Astroparticle Physics. Served as coordinator up to 2009, then co-coordinator of its continuation ASPERA-2 (FP7).

### Chairmanship of Scientific Committees

- (2018-) Chair of the International Scientific Committee of the Polish excellence centre on Astroparticle Physics ASTROCENT
- (2009-2013) Chairman of the Scientific council of Instituto di Fisica de Altes Energias (IFAE) in Barcelona .

### Chairmanship of Administration councils

- (2003-2012) President of the administration council of EGO. The European Gravitation Observatory (EGO) is the host institution of the VIRGO gravitational wave antenna in Pisa, funded mainly by Italy and France and more recently by Netherlands. Served as president from 2003 to 2008 and 2011-2012 and vice-president from 2008 to 2011.
- (2011-2014) Chairman of the resource board of the AUGER High Energy Cosmic Ray Observatory, a multinational observatory (US, Argentina, France, Italy, Germany, Spain, Brazil, ...) of ultra high energy cosmic rays in Argentina.
- (2002-2012) Chairman of the resource boards of the national laboratories: ANTARES Deep Ocean Observatory, LSM Laboratoire Souterrain de Modane, Double-CHOOZ Reactor Neutrino Experiment.
- (2007-2011) Chief executive of the Public-Private-Partnerships (Groupements d’Intérêt Scientifique (GIS)) between IN2P3 and: the company SAGEM on extreme optics
- (2005-2009) Chief executive of the Public-Private-Partnership (Groupements d’Intérêt Scientifique (GIS)) between IN2P3 and the company PHOTONIS on photodetection

## Other

- (2007-) *Principal Investigator of the Institute of Physics and Mathematics of the Universe (KAVLI-IPMU)*. KAVLI-IPMU is an interdisciplinary Institute of Excellence at Tokyo/Japan gathering Theoretical Physicists, Experimentalists and Mathematicians around the themes of Cosmology, Particle and Astroparticle Physics. I was among the 15 principal investigators that proposed it to MEXT in 2007 under the leadership of Hitoshi Murayama

## International Committee Membership

- GWIC-3G Gravitational Wave International Committee 2018-
- Comité Scientifique Externe LMA 2019-
- INC International Neutrino Committee for the Long-Baseline Neutrino program to the Long-Baseline Neutrino Facility (LBNF) infrastructure and to the Deep Underground Neutrino Experiment (DUNE) 2015-
- ESFRI landscape subgroup on astronomy and astrophysics 2014-2016
- ECFA European Committee for Future Accelerators (observer) 2012-2014
- CERN council for the strategy sessions and strategy group (observer) 2012-2014
- OECD group AstroParticle Physics International Forum APIF 2008-2013
- IUPAP group PANAGIC on worldwide astroparticle coordination 2005-2010
- CERN Super Proton Synchrotron Committee (SPSC) 2008-2010
- Member of the Steering Committees of the international infrastructures: 2010-2012 Cherenkov telescope Array (CTA), Cubic Km Neutrino telescope (KM3net) and Large Synoptic Survey Telescope (LSST)
- Member of the steering committee of the space programs (NASA/ESA) : 2002-2012 AMS on the ISS space station and the FERMI satellite

## National Committee Membership

- National Council for Science and Innovation (ESEK) next to the Ministry of Education and Research, Greece 2016-2019
- Comité d'orientation de la Fondation Daniel et Nina Carasso 2016-
- Committee of Large Research Infrastructures of CNRS 2008-2012
- Evaluation Committee for Space Research and Exploration (CERES) and Inter-Organism Committee (CIO) of CNES 2002-2012
- Jury for the Institut Universitaire de France (IUF) 2010-2013
- Member of the Administration Council of Athens University 2012-2013

## Scientific council membership

- Scientific and Technical Council of Institut de Physique Nucléaire (IPNO) 2015-2018
- Scientific Council of Labex OCEVU (Marseille) and ENIGMASS (Annecy) 2013-2018
- Scientific council of IRFU/CEA 2007-2012
- Scientific council of IN2P3 department (PNC) 2001-2002
- Scientific council of Nuclear Physics Institute of Lyon (IPNL) 1997-2001
- Greek National Astronomy Committee 2001-2003
- Scientific council CNRS Research Group (GDR) on Supersymmetry 1997-2002

## Evaluation committee membership for the sake of international agencies and ministries

Fisica de Particulas et Aceleradores (FPA/MINECO), Spain, FLARE Swiss National Science Foundation evaluation panel, Oskar Kein Centre Director evaluation committee, Canada Foundation for Innovation SNOLAB mid-term review, NOW/NIKHEF Director evaluation committee, Roadmap for Large Infrastructures (Greek General Secretariat),

National Science Foundation (NSF) ICECUBE mid-term review, RIKEN/Japan for the Computational Astrophysics Laboratory, Helmholtz Association for Astroparticle Physics programs

### Evaluator for the sake of international agencies and ministries

European Science Foundation (ESF), National Science Foundation (NSF), European Research Council (ERC), Netherlands Organisation for Scientific research (NWO), Royal Swedish Academy of Sciences (KV), Suisse National Foundation (SNF), Belgian national research agencies (FNS and FWO), Italian Ministry for University and Research (MIUR, PRIN), Spanish Ministry of Science (MINECO), Instituto Nazionale di Fisica Nucleare (INFN), Chinese Academy of Science (CAS), Ministry of Education, Youth and Sports of the Czech Republic and Czech Science Foundation.

### Teaching experience

Courses in Classical Mechanics, Quantum Mechanics, Electromagnetism, Solid State Physics, Nuclear Physics, Standard Model of Particle Interactions, Quantum Chromodynamics, Supersymmetry, Particle Physics, in

- University Paris 7 and Ecole Normale Supérieure de Paris (2013-2017)
- University Lyon I and Ecole Normale Supérieure de Lyon (1996-2002)
- University of Athens (1982-1995)

Supervised 6 theses (1996-2002)

- C. Heritier and F. Gharbi on OPERA
- P. Verdier, N. Ghodbane, A. Duperrin and R. Nicolaidou on DELPHI

### Research experience

#### Gravitational Wave Physics (2018-)

- Detector Virgo and future projects
- Key Publications: Gravitational-Wave Physics and Astronomy in the 2020s and 2030s, Nature Reviews Physics volume 3, pages 344-366 (2021); Co-editor (with C. Bambi and K. Kokkotas) of a Handbook of Gravitational Physics (3000 pages, Springer, forthcoming)

#### Standard model of weak and electromagnetic interactions (1986-2002)

- Study of the standard model of electro-weak interactions and supersymmetry: experiment DELPHI of the Large Electron Positron (LEP) collider.
- Phenomenological studies on supersymmetry: Monte Carlo generator SUSYGEN and computing of higher order cross sections
- Key publication: SUSYGEN 2.2: A Monte Carlo event generator for MSSM sparticle production at  $e^+e^-$  colliders. Stavros Katsanevas & Peter Morawitz. Comput.Phys.Commun. 112:227-269,1998. *The main supersymmetry generator of all LEP experiments.* ; Chargino searches at LEP for complex MSSM parameters. By Nabil Ghodbane, Stavros Katsanevas, Imad Laktineh, Janusz Rosiek. Nucl.Phys.B647:190-214,2002; The ring imaging Cerenkov detectors of DELPHI. By W. Adam, et al., Nuclear Instruments and Methods in Physics Research Section A: Volume 323, No 1.

#### Neutrino and Astroparticle Physics (1983-2002)

- Neutrino oscillations, experiment PS180 at CERN 1983-1986
- High Energy neutrino telescopes, NESTOR in Pylos/Greece 1992-1996
- Neutrino oscillations, long baseline experiment CERN-Gran Sasso OPERA 1998-2002
- Key publications: Design studies for a long baseline neutrino beam. A. Ball, S. Katsanevas, N. Vassilopoulos. Nucl.Instrum.Meth.A383:277-290,1996. *The main design of the CERN Gran Sasso beam.* ; Ethernet network-based DAQ and smart sensors for the OPERA long-baseline

neutrino experiment. C Girerd, S Gardien, J Burch, S Katsanevas, J Marteau. Nuclear Science Symposium Conference Record, 2000 IEEE 2.

### **Interdisciplinary studies (1996-2002)**

- DACQ for Positron Emitting Tomography (PET) Scanners (co-holder of a patent)
- Innovative high sensibility photodetectors with high space and time resolution
- Key publication: AUTO-TRIGGERABLE HPD SENSORS FULLY READOUT ON ETHERNET: APPLICATIONS FOR HIGH-ENERGY PHYSICS AND MEDICAL IMAGING. J. LARGERON, J. MARTEAU, G.. MORET 2003. Moret 2003. Nucl.Instrum.Meth. A504:103-108,2003 . *Among the first publications of intelligent sensors in particle physics (1000 intelligent sensors for neutrino experiment OPERA)*

### **Strong interactions (Quantum Chromodynamics, QCD) (1977-1986)**

- Search and discovery of new particle resonances including charm quarks, photoproduction experiment WA4 at CERN , 1977-1979
- Tests of QCD through the study of DRELL-Yan pairs and J/ψ resonances in nuclear targets with antiproton and pion beams, experiment E537 at Fermilab, 1979-1982
- Search for quark-gluon plasma transition, experiment R807-808 at CERN, 1983-1986
- Key publications: Nuclear-Target Effects in J ψ Production in 125-GeV/c Antiproton and π-Interactions By S. Katsanevas, et al., Phys.Rev.Lett.60:2121,1988. 146 citations

### **Scientific responsibilities (1991-2002)**

- Coordinator of data acquisition OPERA 2001-2002
- Steering committee member of the PET scanner consortium Crystal Clear 2001-2002
- Coordinator of the generators for ECFA study for the Linear Collider 2000-2002
- Responsible of the OPERA group in Institute of Nuclear Physics, IPNL 1998-2002
- Coordinator of electronic tracker group OPERA 1998-2001
- Responsible of the DELPHI group in Institute of Nuclear Physics, IPNL 1997-2001
- Coordinator of the group of research of new physics in DELPHI 1996-1999
- Coordinator of the LEP200 group in DELPHI 1991-1996

### **Organisation Conferences-Workshops**

- Conference DAWN on Gravitational Physics August 2018
- Conference in honour of Pierre Binetruy May 2018
- 21<sup>st</sup> Cosmology and particle physics conference COSMO-17, Paris September 2017
- APPEC Town meeting Paris April 2016
- European/Global Coordination on CMB, Florence September 2015, 2016, 2017, 2018
- International Conference for Large Neutrino Infrastructures: 1<sup>st</sup> conference : APC, Paris June 2014, 2<sup>nd</sup> conference : Fermilab April 2015, 3<sup>rd</sup> conference Tokyo May 2016
- Conferences on worldwide coordination in the context of ASPERA, with the presence of chief executive of DOE, NSF, Japan, India, Russia as well as space agencies, CERN and ESO (Amsterdam 2007, Brussels 2008, Paris 2011)
- Workshops in the context of ASPERA on Computing (Lyon, Barcelona, Hannover), and Interdisciplinarity (Paris, Amsterdam)
- Member of the 3 member committee (T. Kajita, S.Katsanevas, CK Jung) of the international conference Next Generation Neutrino and Nucleon decay detectors (NNN) having a yearly edition since 2005 alternating between the 3 regions.
- Co-organisation of the international conference "Mass and oscillations of Neutrinos", Les Houches June 2001
- Co-organisation of the international workshop "Generator tools for Supersymmetry", (1998, 1999, 2000)
- Member of International Advisory Committees of international workshops and conferences: European Physics Society High Energy Physics Conference (2012-), International High Energy

Physics (ICHEP) Conference (2013-), International Conference on Neutrino Physics and Astrophysics, Neutrino (2008-), Identification of Dark Matter (IDM), Neutrino Oscillation Workshop (NOW), Cosmology COSMO, Neutrino Factory NUFACT

## Scientific Publications

Co-signed 429 publications, in the context of more or less large experimental collaborations and a few phenomenological studies, reviews, or new detector concepts with a small number of authors.

[http://inspirehep.net/search?ln=en&p=find+a+katsanevas+&of=hb&action\\_search=Search&sf=earliestdate&so=d](http://inspirehep.net/search?ln=en&p=find+a+katsanevas+&of=hb&action_search=Search&sf=earliestdate&so=d)

## Activities at the interface of science with arts and humanities

Several activities at the interface between science and art/humanities, a selection below:

- Curator of the exhibition "Il Ritmo dello Spazio" Museo della Grafica at Pisa (2018-2019)
- Talks at Saraceno exhibitions Palazzo Strozzi Florence (2020), Venise Biennale (2019)
- Participation to the organisation of the art-science large retrospective of Tomas Saraceno "On air" at the Palais de Tokyo 2018-2019, Article "In media Res" in the exhibition catalogue
- Co-ordinator (2017-2021) of the Art and Science project Univers 2.0 (Funded by Fondation Carasso)
- Co-presenter (2017) of the event: "From Myth to Science", (<http://laborigins.com/2017/06/du-mythe-a-la-science/>) a creation of Laborigines, for the sake of the Société Française de Physique.
- Essay on art and cosmology in "Moment Grec, artistes et intellectuels dans la Grèce d'aujourd'hui", Editions du Regard 2016
- Member of the jury for the call for projects at the interface between art and science of the Foundation Daniel and Nina Carasso "Composer les savoirs pour mieux comprendre les enjeux du monde contemporain" (2015-)
- "Commanditaire" of the work of art "Squaring the Circle" by Attila Csorgo to celebrate the 100 years of Cosmic Rays, financed by the *Fondation de France* in the framework of the program "Nouveaux commanditaires". The work was first exposed in the Museum of Modern Art "Palais de Tokyo", Paris and permanently exposed since June 2014 in the premises of the APC Laboratory.
- "Une procession cosmique", opening essay in the book describing "Transhumances" a flagship project of Marseille Capitale Culturelle Européenne 2013. Published in Actes Sud.
- "Scales of Time" presentation at the festival of Science and Philosophy, Foligno, 2014
- "Il sentimento del Bosone, come le passioni attraversano la ricerca scientifica", public discussion with INFN president F. Ferroni, at the International festival of Philosophy, 2013 Modena.
- "Fluctuat nec mergitur" essay on Linguistics and Cosmology, Mélanges for the linguist C. Clairis, Harmattan, 2014
- Co-organiser of the event "Opera cosmique", a week of Astroparticle physics in the context of the year of Astronomy 2009, at the Tour Montparnasse.
- Post-scriptum of the Greek translation of "Le temps des crises", of Michel Serres, Editions Kalentis, 2011
- "Ornements, Apokatastasis", Essay on the interface of art and cosmology, catalogue of the large retrospective of the works Stella and Takis Kavalieratos at the Athens National Benaki Museum, (in greek) Agra editions, 2008
- Other essays on art and science on art exhibition catalogues (Artists Kontarini, Georgiou) and numerous presentations on vulgarisation of science in France and across Europe.