

## **Paraskevas A. Sphicas: Curriculum Vitae**

Professor of Physics, National and Kapodistrian University of Athens

Principal Scientist, CERN, EP Department, CH-1211 Geneva 23

e-mail: [Paris.Sphicas@cern.ch](mailto:Paris.Sphicas@cern.ch); Tel: +41 22 767 1617, Fax: +41 22 767

Date of Birth: July 13, 1963.

### **Professional positions:**

- Feb 2002 – present: Professor, Physics Department, Univ. of Athens
- Aug 1997 – present: Principal Scientist, EP Department, CERN
- Feb 1997 – Feb 2002: Professor, Physics Department, MIT
- Jul 1995 – Jan 1997: Associate Professor, Physics Department, MIT
- Jul 1991 – Jun 1995: Assistant Professor, Physics Department, MIT
- Nov 1990 – Jun 1991: Wilson Fellow, FNAL, Batavia, Illinois, USA
- Jul 1988 – Oct 1990: Scientific Associate, CERN, Geneva, Switzerland

### **Education:**

- Feb 1985 – Jun 1988: Ph.D. in Physics, MIT
- Sep 1981 – Jun 1984: B.Sc. in Physics, MIT

### **Areas of scientific interest:**

- Elementary Particle Physics with emphasis on electroweak interaction and symmetry breaking, study of heavy flavors (top and bottom quarks), search for physics beyond the Standard Model (e.g. supersymmetry).
- Design of electronic and computing systems, especially trigger and data acquisition systems.

### **Positions of responsibility:**

- Sep 2020 – present: Leader of the CMS Physics and General Software Group, CERN.
- Jan 2010 – present: Director of the Institute of Accelerating Systems and Applications, Athens, a non-profit research institute which belongs jointly to NKUA and the National Technical University of Athens.
- Jan 2014 – Aug 2016: Deputy Spokesperson of the CMS experiment at the LHC.
- Jan 2012 – Dec 2013: Chairperson of publications committee of the CMS experiment.
- Jan 2010 – present: Director of the Institute of Accelerating Systems and Applications, Athens, Greece.
- Jan 2007 – Dec 2009: Physics Coordinator of the CMS experiment at CERN.
- Jan 2005 – Dec 2006: Project Leader of CMS Computing, Software, Physics/Trigger project.
- Jan 2001 – Feb 2006: Project Leader of “Physics Reconstruction and Selection” project of CMS.
- Aug 1997 – Feb 2000: Responsible for the R&D on the event-builder of CMS’ data acquisition system.
- Apr 1998 – Feb 1999: Physics Coordinator of the LEP accelerator at CERN.
- Jul 1994 – Dec 1997: Project Leader of US-CMS Data Acquisition (DAQ) system.
- Aug 1994 – Dec 1996: Co-convener of the B-physics analysis group (CDF experiment at Fermilab).
- Jan 1991 – Dec 1996: Responsible for the design, development and installation of the Event Builder for the CDF DAQ system. Design and implementation of first commercial network-based DAQ system in HEP.
- Jul 1988 – Nov 1990: Responsible for software development for a parallel computing engine in collaboration with the IBM research centres in Yorktown Heights (US) και in Boeblingen (Germany). Responsible for the software for a novel interface between the IBM-360 channel and the VME bus.

### **Professional Committees, Editorships, Reviews, Panels:**

- Elected Fellow of the Royal Society, London, U.K. (2019)
- European Strategy for Particle Physics (2019-2020): Co-Convener of Beyond the Standard Model physics group of the 2020 update of European Strategy for Particle Physics.
- Member, Marie-Curie Advisory Group, European Commission (2013)
- Chairperson of the High Energy and Particle Physics Board of the European Physics Society (EPS) (2011–2013); secretary of the HEPP Board (2009–2011) and member (2002–2009).
- Member of the High Energy Physics Advisory Panel [HEPAP] of the US Department of Energy and National Science Foundation (Jan 2009 – Dec 2011).
- Editor: Annual Rev. of Nuclear and Particle Physics (ARNPS) – since 2015; Journal for Instrumentation (JINST) 2006-2012; International Journal of Modern Physics (IJMPA); in Modern Physics Letters – since 2011. Referee for many of the major (Western) international journals in High Energy Physics.
- Referee for various programs for the US Department of Energy (DOE), National Science Foundation (NSF); also in Belgium, Cyprus, France, European Commission, European Research Council, Italy, Netherlands, Spain, Switzerland, United Kingdom.

- Member of organizing committee and convener of sessions at international symposia/conferences including International Conference on High Energy Physics, EPS Conference on High Energy Physics, Computing in High Energy Physics, Beauty Physics series, IEEE NSS, European Physical Society, American Physical Society, Hadron Collider Physics, Physics at LHC, several HEP schools)
- Member of CERN committees: Advisory Board of “CERN Courier” (1998–2004); LHC Computing Board (1998–2001); CERN-PH referee for all LEP papers (2001–2010).

**Principal Invited Lectures:** More than 50 plenary and invited talks at international conferences.

**Major plenary talks from 2010 onwards:**

- 2020, Aug: Conference Summary and Outlook, 40<sup>th</sup> International Conference of High Energy Physics, Prague (remote).
- 2017, Jul: Highlights from EPS 2017, in European Physical Society Meeting, Venice (Italy).
- 2015, Aug: Experimental Summary, in LHCP International Conference, St. Petersburg (Russia).
- 2015: The Physics of the LHC, invited talk at a colloquium dedicated to Francois Englert, Particle Physics After the 2013 Nobel Prize, Belgian Academies for Sciences and the Arts, Brussels (Belgium).
- 2014, Oct: What we have learned from the LHC, “LHC Days in Split”, Split (Croatia).
- 2014, Jan: Searches for Supersymmetry, in “Before, behind and beyond the discovery of the Higgs boson”, Royal Society, London (UK).
- 2013, Jun: New Physics Searches at the LHC: the SUSY perspective, in “Nature at the Energy Frontier”, Latsis Symposium, ETH, Zurich (Switzerland).
- 2013, Mar: Experimental Summary, in “Rencontres de Moriond, EW Interactions and Unified Theories”, La Thuile (France).
- 2012, Nov: LHC results and the Higgs quest, in “Paco Yndurain colloquia”, Universidad Autonoma de Madrid, Madrid (Spain).
- 2012, Jan: LHC new physics searches outside the Higgs sector, in “ZPW2012: Zurich Phenomenology Workshop”, ETH Zurich, Zurich (Switzerland).
- 2011, Jul: LHC Grand Vision, in “Higgs Hunting”, Orsay (France).

**Some major plenary talks prior to 2010**

- 2009, May: The LHC, keynote plenary, in American Physics Society meeting, Denver (USA).
- 2006, May: State of readiness of LHC experiment software, keynote plenary, in “CHEP06 (Computing in High Energy and Nuclear Physics)”, Mumbai (India).
- 2004, Jul: Higgs at LHC, in Physics at LHC 2006, Vienna (Austria).
- 2002, Jul: Looking forward to (physics at) the LHC”, plenary at ICHEP2002, “31<sup>st</sup> International Conference on High Energy Physics”, Amsterdam (Netherlands).
- 2002, Feb: Physics at the LHC, in “Preview of Current and Upcoming Discoveries”, Aspen Center for Physics, Aspen, Colorado (USA).
- 2000, Feb: General Summary and Conclusion, in “CHEP 2000”, Padova (Italy).
- 1999, Dec: Physics at LHC, in “PASCOS 99”, Granlibakken, Lake Tahoe, Dec 1999.
- 1999, Oct: Data Acquisition Systems in High Energy Physics experiments, in 1999 IEEE Nuclear Science Symposium and Medical Imaging Conference, Seattle, Washington (USA).

**PhDs supervised (Year PhD awarded):**

- 2022: Emmanouil Vourliotis, (NKUA): “Search for Supersymmetric particles with compressed mass spectrum in proton-proton collisions at a centre-of-mass energy of 13 TeV”
- 2022: Pantelis Kontaxakis, (NKUA): “Search for Supersymmetry in proton-proton collisions at center-of-mass energies of 13 TeV with the CMS experiment at the LHC”
- 2015: Antonis Agapitos, (NKUA): “A search for compressed supersymmetry in events with soft leptons, low jet multiplicity, and missing transverse momentum with the CMS experiment at the LHC”
- 2014: L. Gouskos, (NKUA): “Search for supersymmetry in events with a single lepton, jets and missing transverse energy with the CMS detector at the LHC”
- 2008: G. Karapostoli, (NKUA): “Observation and Measurement of the supersymmetric process  $\tilde{\chi}_2^0 \rightarrow \tilde{\chi}_1^0 \ell^+ \ell^-$  with the CMS experiment at the LHC”
- 2008: C. Papadimitropoulos, (NKUA): “Design and Simulation of the CMS Data Acquisition System”
- 2001: P. Ngan, (MIT): “Measurement of the  $\psi(2S)$  Polarization in  $p\bar{p}$  Collisions at  $\sqrt{s}=1.8$  TeV”
- 1999: D. Vuvinic, (MIT): “Observation of Excited B Mesons in  $p\bar{p}$  Collisions at  $\sqrt{s}=1.8$  TeV”
- 1998: K. Kelley, (MIT): “Measurement of the CP Violation Parameter  $\sin(2\beta)$ ”
- 1997: P. Maksimovic, (MIT): “Observation of  $\pi - B$  meson Charge-flavor Correlations and Measurement of Time Dependent  $B^0 - \bar{B}^0$  Mixing in  $p\bar{p}$  Collisions”. *Best PhD thesis award* at Fermilab, Chicago, USA.
- 1997: T. Daniels, (MIT): “Charmonium Production in  $p\bar{p}$  collisions at  $\sqrt{s}=1.8$  TeV”.
- 1997: W. Bokhari, (MIT): “Observation of the fully hadronic decay of  $t\bar{t}$  in  $p\bar{p}$  collisions at  $\sqrt{s}=1.8$  TeV”.