

## Dr Nigel Watson BSc, PhD

Reader in Particle Physics

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### About

Dr Watson works on physics analysis and core simulation in the LHCb Experiment at CERN. He also has interests in detector development for future Particle Physics experiments. He was based at CERN from 1990-1998, and has worked for CERN, CRPP/Carleton Univ. (Ottawa, Canada), Rutherford Appleton Lab. and Birmingham University, where he became a member of academic staff in 2005.

### Qualifications

- Ph.D. in Particle Physics, University of Birmingham, 1991
- BSc Hons, Physics, University of Birmingham, 1987

### Biography

Nigel Watson obtained his Ph.D. from the University of Birmingham in 1991, on event reconstruction and measurements of electroweak effects in  $e^+e^-$  the **OPAL detector at LEP** (<http://opal.web.cern.ch/Opal/PPwelcome.html>). Continuing on this experiment, his physics activities included WW physics, soft QCD and event generators, and his technical contributions included online monitoring and alignment/calibration of the Z tracking chambers; online/offline database system for the experiment; reconstruction software for the endcap muon chambers; and software distribution framework.

In 2001, he began development of high precision calorimetry for a future  $e^+e^-$  collider (**CALICE Collaboration** (<https://twiki.cern.ch/twiki/bin/view/CALICE>), ~300 physicists), is joint analysis coordinator (since 2007) and has carried out simulation studies, data analysis and testbeams for a CMOS MAPS based digital ECAL (DECAL). In 2013, he joined the **CLIC** (<http://clic-study.org/index.php>) **Detector and Physics Study Group** (<http://lcd.web.cern.ch/LCD/>)

He coordinated R&D for the ILC Beam Delivery System collimators, was PI for the SLAC T480 R&D project (**RF wakefields** (<http://hepunix.rl.ac.uk/swmd/>)), and for **ILC collimator damage** (<https://twiki.cern.ch/twiki/bin/view/ILCBDSColl/WebHome>) tests at KEK.

Following on from his career interests in precise measurements, carried out at LEP and prepared for by ILC-R&D, in 2011 Nigel brought a team at Birmingham into the **LHCb experiment at CERN** (<http://lhcb.web.cern.ch/lhcb/>), to extract new physics with rare decays at LHC, as well as working on the core simulation framework

### Teaching

- First year tutor
- **Introduction to Particle Physics and Cosmology** (<http://www.ep.ph.bham.ac.uk/twiki/bin/view/General/Y1IntroToPpc>) (year 1)
- **Design Group Studies** (<http://epweb2.ph.bham.ac.uk/user/thompson/gs/gs.html>) - Particle Physics (year 3)
- **Particle Physics** (<http://www.ep.ph.bham.ac.uk/twiki/bin/view/General/Y3Pp>) (year 3)
- Particle Physics MSci projects (year 4)
- Head of Year 4

### Postgraduate supervision

- LHCb physics
- LHCb Geant4 simulation and tools
- MAPS-based digital electromagnetic calorimetry

### Research

- LHCb Physics
- Rare decays
- Detector simulation / Geant4

- Detector R&D - LHCb upgrades
- Physics and detector design for a future  $e^+e^-$  linear collider

## Other activities

- LHCb Experiment at CERN
- LHCb Editorial Board (2013-2015)
- LHCb Collaboration Board
- Member, STFC PPD Steering Committee
- Member, STFC MICE and UK NF Oversight Committee (2008 - )
- Member, STFC Particle Physics Grants Panel (2007 - 2012)
- P.I., SLAC T480 R&D project (2005-project end)
- Spoiler Wakefield and Mechanical Design coordinator, FP6 EUROTeV Consortium (2005-2008)
- Member, ILC Global Design Executive (2007 – 2010)
- CALICE co-Analysis coordinator (2007-)
- STEM Ambassador (2010 onwards), school visits, ...
- CLIC Detector and Physics Study Group

## Publications

Publications list **automatically maintained via the INSPIRE web site** (<http://inspirehep.net/search?p=find+author+watson,n.k.>)

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