We use cookies to ensure that we deliver the best user experience of our website. If you would like to, you can change your cookie settings at any time. Continue

Dr John Allan Wilson BSc, DIC, PhD, C Phys

Reader in Particle Physics

Contact details

Telephone +44 (0) 121 414 4654 (tel:+44 121 414 4654)

Fax +44 (0) 121 414 6709

Email j.a.wilson@bham.ac.uk (mailto:j.a.wilson@bham.ac.uk)

School of Physics and Astronomy

About

Dr Wilson has conducted his research in particle physics at CERN, the European Centre for Particle Physics Research, participating in experiments at the highest energy: UA1 at the proton - antiproton collider, in which the W and Z^0 were discovered, OPAL at LEP, the e^+e^- collider, which placed stringent limits on the Standard Model, and currently ATLAS at the Large Hadron Collider, investigating particle interactions at the highest energy. He is co-author of over 500 research papers in scientific journals. He is also actively involved in outreach work. He developed a portable spark chamber which he demonstrates regularly at schools, colleges and public meetings.

Qualifications

- DIC, PhD in particle physics (University of London), 1976
- BSc Hons, University of Aberdeen, 1969

Biography

John Wilson obtained his PhD from Imperial College in 1976 having measured the K^- charge exchange with a polarised target, a novel measurement, the first using a "frozen spin target". Before the end of his PhD, he joined the University of Birmingham as a research fellow in 1973. With Birmingham, he worked on a hypercharge exchange experiment and then on the measurement of dimuon production at the CERN Super Proton Synchrotron (SPS). This was the first result from the SPS and showed clearly the importance of quark-antiquark annihilation in J/Ψ production. John Wilson was resident at CERN for two years (1977, 19787) as contact person for this experiment.

In 1978, with the Birmingham group, he was a founding member of the UA1 collaboration which subsequently discovered the Intermediate vector Bosons (the W^{+-} and Z^0). These were very exciting times; our experiment spokesman, Carlo Rubbia shared the Nobel Prize for these discoveries.

From 1985 till 2002, he worked on the OPAL experiment at LEP with major responsibilities for the construction of the endcap muon chambers and for analysing the muon data.

In 2000-2002, He carried our an experiment on the TRIUMF accelerator in Vancouver, Canada, to measure muon scattering at low energy – an important test to gauge the feasibility of muon cooling for possible future neutrino factories.

From 2002 till the present day, Wilson has been working on the ATLAS experiment: firstly on developing radiation hard optical components with which to read out the signals from the experiment's Semiconductor Tracker (SCT). Then a major activity has been the testing of the SCT readout electronics, commissioning the detector and monitoring its subsequent operation.

Teaching

- In charge of the Year1 Laboratory
- Year 2 lectures in Electronics (analogue and digital combined for the first time)
- Year 2 tutorials
- Year 3 General Problem classes (one of three staff involved)
- Year 4 project supervision

Postgraduate supervision

- Supervising research students in particle physics: currently one on the ATLAS experiment

Research

RESEARCH THEMES

- Particle physics at the highest energy
- Detector research and development (especially monolithic active pixel sensors - MAPS)

Publications

- Aad G. et al, (2010), The ATLAS Inner Detector Commissioning and Calibration, EPJC 70 : 787
- Aad G et al, (2011), Study of the performance of the AR:AS detector using cosmic rays, EPJC 71 : 1593
- Baillin J.A. et al, (2011), Design and Performance of a CMOS study sensor for a binary readout electromagnetic calorimeter, J. Inst 6 : P05009
- Aad G. et al, Measurement of the inclusive prompt photon cross section in pp collisions at with the ATLAS detector, Phys Rev D 83, 05 2005

© University of Birmingham 2014