University of Birmingham

Dr Alan Watson BA, PhD

Senior Lecturer

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About

Alan Watson is a Senior Lecturer in Particle Physics, and head of the Birmingham team working on the ATLAS experiment at the Large Hadron Collider.

He is co-author of more than 800 research papers in the field of experimental particle physics.

He is an enthusiastic communicator of particle physics, and has given talks to local schools, local and national media.

Qualifications

- PhD in Experimental Particle Physics, Imperial College, 1989
- BA (Hons) in Physics, Oxford University, 1985

Biography

Alan Watson obtained his PhD from Imperial College in 1989, on measurement of electro-weak effects in charm production at PETRA. He joined the University of Birmingham as a researcher on the OPAL experiment, where he was responsible for the readout of the endcap muon detectors and studied electroweak and heavy flavour physics. He became a member of the permanent academic staff of the university in 1994.

Between 1998 and 2008 he worked on the BaBar experiment at SLAC, studying decays of B mesons to 3-body charmless states.

In 1991 he started working on preparation for the Large Hadron Collider, joining the Eagle proto-collaboration, which later merged with another team to become ATLAS. His main work has been on the design of the first level calorimeter trigger for ATLAS (L1Calo), particularly algorithm design and physics functionality, and is the offline and performance coordinator for L1Calo. He currently working on trigger optimisation, trigger upgrade design and top/heavy flavour physics at the LHC. He is L1Calo project leader within the UK, and will take over as Birmingham ATLAS group leader in summer 2011.

Teaching

- Y1 Quantum Mechanics
- Y2 Classical Mechanics and Relativity
- Y1 Academic Tutor
- Y3/Y4 Critique Assessment

Postgraduate supervision

- Supervision of PhD students in Particle Physics

Research

RESEARCH THEMES

- New Physics Searches, Top and Heavy Flavour Physics
- Particle physics experiment design

RESEARCH ACTIVITY

- Trigger design and optimisation for the LHC
- Top physics and searches at the LHC
- Precision electroweak physics

Publications

The ATLAS Collaboration, Aad, G et. al. (2011), Measurement of inclusive jet and dijet cross sections in proton-proton collisions at 7 TeV centre-of-mass energy with the

ATLAS detector, EUROPEAN PHYSICAL JOURNAL C, Volume: 71 Issue: 2 Article Number: 1512

The ATLAS Collaboration, Aad, G et. al. (2011), Search for quark contact interactions in dijet angular distributions in pp collisions at root s=7 TeV measured with the ATLAS detector, PHYSICS LETTERS B Volume: 694 Issue: 4-5 Pages: 327-345

The ATLAS Collaboration, Aad, G et. al. (2010), Performance of the ATLAS detector using first collision data, JOURNAL OF HIGH ENERGY PHYSICS Issue: 9 Article Number: 056

R Achenbach, et. al. (2008), The ATLAS Level-1 Calorimeter Trigger, JOURNAL OF INSTRUMENTATION, Volume 3

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