

**Present Appointment:** Research Professor (October 2003 - )  
Emeritus Professor (since October 2003)  
School of Physics and Astronomy, University of Leeds, UK

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**Date of Birth:** 26 September 1938 (Edinburgh, Scotland)

**Education:** University of Edinburgh: BSc (1st Class Honours in Physics) 1960  
PhD 1964: Physics of Condensation of Water Vapour

#### **Main Research Interests**

Ultra-high energy cosmic rays, ultra-high energy gamma-rays and high energy astrophysics.

#### **Research Recognition:**

- 2007 Spokesperson Emeritus of Pierre Auger Observatory
- 2003 - Affiliate of the Kavli Institute of Cosmological Physics, University of Chicago
- 2002 Distinguished Visiting Professor, University of Chicago: September to December 2003
- 2001 - 2007 Spokesperson for the Pierre Auger Observatory
- 2001 - 2003 PPARC Senior Research Fellow: January 2001 to September 2003
- 2000 Elected Fellow of the Royal Society of London, FRS
- 1999 Royal Society Exchange Visitor to Mexico (2 weeks)
- 1998 Elected Fellow of the Institute of Physics (FInstP)
- 1995-2001 Co-spokesperson for the Pierre Auger project
- 1994 Smithsonian Visiting Fellow, Mount Hopkins Observatory, USA (6 weeks)
- 1984 -2003 Professor of Physics, University of Leeds: Personal Chair (Research)
- 1984 Royal Society Exchange Visitor, Moscow and Yakutsk, Soviet Union (3 weeks)
- 1980 NSF Visiting Fellow at University of New Mexico
- 1976 – 1984 Reader in Cosmic Particle Physics, University of Leeds

#### **Recent Invited Lectures**

- 2008 Hoxton Lecture at University of Virginia, April 2008  
George Darwin Lecture to Royal Astronomical Society, October 2008
- 2007 Invited Speaker at Symposium to honour Livio Scarsi and Beppe Occhialini, Palermo, October 2007
- 2005 Invited Speaker at Centenary Celebration for Bruno Rossi: Padova and Venice, September 2005
- 2002 Evening Discourse at the Royal Institution, London: March 2002
- 2001 Invited speaker at Heisenberg Centennial Meeting: December 2001
- 2000 Elizabeth Spreadbury Lecture, University College London: February 2000

## **Administrative Activities in Research from 1 August 1997**

### **PPARC (Particle Physics and Astronomy Research Council, UK – now STFC)**

Until my retirement in September 2003, I worked extensively for PPARC. I have been chair of the PPARC Ground Based Facilities Committee (1996 -1999) and a member of the PPARC Astronomy Committee. I have also acted as a member of the XMM Steering Committee for 5 years from 1989 and as chair of the Review Committee for the GEO 600 project (German/UK Gravitational Wave Detector in Hanover, Germany) for 8 years from September 1995.

Member of the PPARC Space Science Advisory Committee: 2005 - 2007

### **Other National and International Advisory Activities**

Member of International Committee appointed by Max Planck Society to advise on appointment of three new directors for the Heisenberg Institute ( May 1996 – October 2002 ).

Member of the Steering Group for the Space Centre at the University of Leicester, at the request of the Vice-Chancellor, University of Leicester, March 1998 – May 2003

Member of the IUPAP Committee, PANAGIC (Particle and Nuclear Astrophysics and Gravitation International Committee (1999 - 2002)

Member of the Steering Committee for the ANTARES project (2000 - ).

Member of the Review Committee of the Astroparticle Physics European Co-ordination Committee (2002- )

Assessor on Scientific Committee for the ESA project, EUSO (2001 – 2004)

Member of the ESA Fundamental Physics Advisory Group (2005 – 2007)

Member of International Advisory Board for JEM-EUSO Project, Riken, Japan (2007 - )

Member and/or chair of numerous International Advisory Committees for conferences.

### **Editorial Work**

Receiving Editor for Astroparticle Physics (Elsevier) September 1991 – December 2005

Editorial Board of Nuclear Instruments and Methods A (Elsevier) July 1992 -

### **Selected Journal and Review Articles**

#### **Articles in refereed journals**

A A Watson and J G Wilson, 'Fluctuation Studies of Large Air Showers: the composition of primary cosmic ray particles above  $10^{18}$  eV', J Phys A 7 1199 1974

D M Edge, A M T Pollock, R J O Reid, A A Watson and J G Wilson, 'A Study of the Arrival Direction Distribution of High Energy Particles as Observed from the Northern Hemisphere', J Phys G 4 133 1978

J Linsley and A A Watson, 'Validity of Scaling to  $10^{20}$  eV and High Energy Cosmic Ray Composition' Phys Rev Letters 46 459 1981

R Walker and A A Watson, 'Measurement of the fluctuations in the depth of maximum of showers produced by primary particles of energy  $> 1.5 \times 10^{17}$  eV', J Phys G 8 1131 1982

T K Gaisser, A M Hillas, J C Perrett, M A Pomerantz, R J O Reid, N J T Smith, T Stanev and A A Watson

'Search for photons of energy  $> 50$  TeV from SN1987A in early 1988', *Phys Rev Letters* 62 1425 1989

M A Lawrence, R J O Reid and A A Watson, 'The Cosmic Ray Energy Spectrum above  $4 \times 10^{17}$  eV as measured with the Haverah Park Array', *J Phys G* 17 733 1991

Kerrick, A D, Akerlof, C W, Biller, S D, Buckley, J H, Cawley, M F, Chantell, M, Connaughton, V, Fegan, D J, Fennell, S, Gaidos, J A, Hillas, A M, Lamb, R C, Lewis, D A, Meyer, D I, McEnery, J, Mohanty, G, Quinn, J, Rovero, A C, Rose, H J, Schubnell, M S, Sembroski, G, Urban, M, Watson, A A, Weekes, T C, West, M, Wilson, C and Zweerink, J 'Outburst of TeV photons from Markarian 421', *Astrophys. J. Lett.*, 438, L59, 1995.

Medina-Tanco G A and Watson A A, 'Dark Matter Halos and the Anisotropy of Ultra High Energy Cosmic Rays' *Astroparticle Physics*, 12, 25-34, 1999.

Ave M, Hinton J A, Vazquez R A, Watson A A and Zas E, 'New Constraints from Haverah Park Data on the Photon and Iron Fluxes of Ultra High Energy Cosmic Rays', *Physical Review Letters*, 85, 2244-2247, 2000.

J Abraham et al., (The Pierre Auger Collaboration): 'Properties and Performance of the Prototype Instrument for the Pierre Auger Observatory' *Nuclear Instruments and Methods A* 523 50 – 95 2004

Ave, M., Busca, N., Olinto, A. V., Watson, A. A. and Yamamoto, T. 'Cosmogenic neutrinos from ultra-high energy nuclei' *Astroparticle Physics*, 23 19 2005

J. Abraham et al. (Pierre Auger Collaboration) 'Correlation of the highest energy cosmic rays with nearby extragalactic objects', *Science* 318 (2007) 939 (arXiv:0711.2256v1 [astro-ph]).

### **Selected Invited Papers and Review Articles**

A A Watson 'Giant Air Showers' Invited Rapporteur Paper 14th Int Cosmic Ray Conf (Munich) 11 4019 1975

A A Watson 'Cosmic Gamma Rays and Cosmic Nuclei above 1 TeV' Invited Rapporteur Paper, Proceedings of 19th International Cosmic Ray Conference (La Jolla) 9 11 1985

A A Watson 'The Highest Energy Cosmic Rays' *Nuclear Physics B (Proc Suppl)* 22B 116 1991

A A Watson, 'Charged Cosmic Rays above 1 TeV', Invited Rapporteur Paper in Proceedings of 25th International Cosmic Ray Conference Durban, World Scientific, 8 257 1998

Watson, A A, 'Ultra High Energy Cosmic Rays - an Enigma' *Particle Physics and the Universe*, Proceedings of Nobel Symposium 198, Haga Slott, Enköping, Sweden, 20-25 August, 1998. Edited by L. Bergström, P. Carlson, and C. Fransson. *Physica Scripta*, Vol. T85 p.183 2000

Nagano M and Watson A A, 'Observations and Implications of the Ultra-High Energy Cosmic Rays', *Reviews of Modern Physics*, 72, 689-732, 2000.

AA Watson, The experimental input to our understanding of high-energy interactions  
ISVHECRI Wei Hai, China (2006) *Nucl Phys B (Proc Suppl)* 175- 176 pp501 – 516 2008

A.A. Watson (for Pierre Auger Collaboration), Highlights from the Pierre Auger Observatory - the birth of the Hybrid Era Highlight Talk, 30th International Cosmic Ray Conference Merida, Mexico (3-11 July 2007) (arXiv:0801.2321 [astro-ph])