



# Dr. David Michael South

## ATLAS Computing Co-Coordinator

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Date of Birth: 18.01.1977  
Languages: English, German

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### Employment

- **Staff Scientist, DESY-Hamburg** since Feb 2013
- **Research Associate, DESY-Hamburg** Jul 2010 – Jan 2013
- **Research Associate, Technische Universität Dortmund** Jan 2007 – Jun 2010
- **Research Fellow, DESY-Hamburg** May 2003 – Dec 2006

### Professional Experience

- **Current positions**
  - ATLAS Computing Co-Coordinator Oct 2023
  - IRIS-HEP Steering Board Member Oct 2023
  - Rucio Advisory Board Member Apr 2023
  - ATLAS International Computing Board Member Oct 2012
  - H1 Physics Board Member Jul 2012
- **Former positions, activities and responsibilities**
  - ATLAS Distributed Computing Coordinator 2019 – 2023
  - ATLAS Monte Carlo Production Coordinator 2017 – 2019
  - Chair of ATLAS Panel on Analysis Preservation 2015 – 2017
  - Chair of DESY National Analysis Facility User Committee 2014 – 2023
  - ATLAS Data Reprocessing Coordinator 2014 – 2017
  - Chair of LHC Physics Discussions at DESY 2013 – 2021
  - ATLAS Conditions Database Coordinator 2011 – 2014
  - DESY Data Preservation Group Leader 2010 – 2017
  - DPHEP Working Group Convener on Data Preservation Models 2009 – 2017
  - H1 Computing and Software Coordinator 2008 – 2012
  - H1 Analysis Software Project Convener 2007 – 2009
  - H1 Rare and Exotics Physics Working Group Convener 2006 – 2012
  - H1 Run Coordinator 2005 – 2007
  - Supervision of DESY Summer Students 2005 – 2006
  - On call for the HERA Transverse Polarimeter 2004 – 2005
  - On call for the H1 LAr Calorimeter, Forward Tracker and Forward Muon Detector 2003 – 2007
  - Control room shifts, including as shift leader, for the H1 Experiment 2000 – 2007
- **Conference and workshop roles**
  - Principal Organiser of ATLAS Software and Computing Week, at DESY 2018
  - Convenor of Track 9: Security, Policy, Outreach at the CHEP 2016 Conference 2016
  - Convenor of the Electroweak and Searches Working Group at the DIS 2012 Conference 2012
  - Principal Organiser of the 1st DPHEP Workshop, at DESY 2009
  - Convenor of the Electroweak and BSM Working Group at the DIS 2008 Conference 2008

### Education

- **Ph.D in High Energy Physics** University of Manchester, UK 1999 – 2003
  - Thesis title: Events with Isolated Leptons and Missing Transverse Momentum in  $e^{\pm}p$  Collisions at HERA
  - Supervisor: Prof. Dr. Robin Marshall FRS
  - Subject of first year report: MC Studies for a NC based Supernova Neutrino Detector
- **M.Phys in Physics and Astrophysics 2.1(Hons.)** University of Manchester, UK 1995 – 1999
  - Courses including particle physics, nuclear physics, quantum mechanics, relativity, astrophysics, astronomy, cosmology, thermodynamics and statistics
- **Secondary Education** King Edward VI School, Morpeth, UK 1990 – 1995
  - 4 GCE A-levels in Mathematics (A), Physics (A), Chemistry (B), General Studies (A)
  - 10 GCSEs including English (A), English Literature (A), Mathematics (A), Sciences (AA), History (A)

## Journal Publications

I have over a thousand peer-reviewed publications, the majority with the ATLAS and H1 Collaborations. Those listed below are papers I have either written or made a significant contribution to.

- D. M. South and M. Turcato, “Review of Searches for Rare Processes and Physics Beyond the Standard Model at HERA”, *Eur. Phys. J.* **C76** (2016) 336 [arXiv:1605.03459].
- F. D. Aaron *et al.* [H1 Collaboration], “Inclusive Deep Inelastic Scattering at High  $Q^2$  with Longitudinally Polarised Lepton Beams at HERA”, *JHEP* **1209** (2012) 061 [arXiv:1206.7007].
- F. D. Aaron *et al.* [H1 Collaboration], “Search for Contact Interactions in  $ep$  Collisions at HERA”, *Phys. Lett.* **B705** (2011) 52 [arXiv:1107.2478].
- F. D. Aaron *et al.* [H1 Collaboration], “Search for First Generation Leptoquarks in  $ep$  Collisions at HERA”, *Phys. Lett.* **B704** (2011) 338 [arXiv:1107.3716].
- F. D. Aaron *et al.* [H1 Collaboration], “Search for Lepton Flavour Violation at HERA”, *Phys. Lett.* **B701** (2011) 20 [arXiv:1103.4938].
- F. D. Aaron *et al.* [H1 and ZEUS Collaborations], “Events with an Isolated Lepton and Missing  $P_T$  and Measurement of  $W$  Production at HERA”, *JHEP* **1003** (2010) 035 [arXiv:0911.0858].
- F. D. Aaron *et al.* [H1 Collaboration], “Events with Isolated Leptons and Missing  $P_T$  and Measurement of  $W$  Production at HERA”, *Eur. Phys. J.* **C64** (2009) 251 [arXiv:0901.0488].
- A. Aktas *et al.* [H1 Collaboration], “Tau Lepton Production in  $ep$  Collisions at HERA”, *Eur. Phys. J.* **C48** (2006) 699 [hep-ex/0604022].
- A. Aktas *et al.* [H1 Collaboration], “Search for Single Top Quark Production in  $ep$  Collisions at HERA”, *Eur. Phys. J.* **C33** (2004) 9 [hep-ex/0310032].
- V. Andreev *et al.* [H1 Collaboration], “Isolated Electrons and Muons in Events with Missing Transverse Momentum at HERA”, *Phys. Lett.* **B561** (2003) 241 [hep-ex/0301030].

## Conference Proceedings, Papers and Articles

- T. Basaglia *et al.* [DPHEP Collaboration], “Data Preservation in High Energy Physics – DPHEP Global Report 2022”, arXiv:2302.03583.
- A. Forti *et al.* “Evolution of ATLAS Analysis Workflows and Tools for the HL-LHC Era”, vCHEP 2021, EPJ Web Conf. **251** (2021) 02002.
- A. Forti *et al.* “Running Folding@Home Covid-19 Simulations on ATLAS Resources”, vCHEP 2021, EPJ Web Conf. **251** (2021) 02003.
- D. Britzger *et al.* “Preservation Through Modernisation: The Software of the H1 Experiment at HERA”, vCHEP 2021, EPJ Web Conf. **251** (2021) 03004 [arXiv:2106.11058].
- S. Amerio *et al.* [DPHEP Study Group], “Status Report of the DPHEP Study Group: A Global Effort for Sustainable Data Preservation in High Energy Physics”, arXiv:1512.02019.
- M. Borodin *et al.*, “Big Data Processing in the ATLAS Experiment: Use Cases and Experience”, *Proc. Comp. Sci.* **66** (2015) 609.
- M. Borodin *et al.*, “Unified System for Processing Real and Simulated Data in the ATLAS Experiment”, DAMDID 2015 [arXiv:1508.07174].
- D. Krucker *et al.*, “Data Preservation for the HERA Experiments at DESY using dCache Technology”, CHEP 2015, *J. Phys. Conf. Ser.* **664** (2015) 042029.
- R. W. Jones, D. M. South and K. Cranmer, “ATLAS Data Preservation”, CHEP 2015, *J. Phys. Conf. Ser.* **664** (2015) 032017.
- K. Cranmer *et al.*, “Analysis Preservation in ATLAS”, CHEP 2015, *J. Phys. Conf. Ser.* **664** (2015) 032013.
- D. Ozerov and D. M. South, “A Validation Framework for the Long Term Preservation of HEP Data”, CHEP 2013, arXiv:1310.7814.

- P. Kostka, A. Polini and D. M. South, “A New Detector for Deep Inelastic Physics”, HEP-EPS 2013, arXiv:1310.3170.
- “DPHEP: From Study Group to Collaboration”, DIS 2013 and HEP-EPS 2013, arXiv:1309.7868.
- P. Kostka, A. Polini and D. M. South, “The LHeC Detector”, DIS 2013, arXiv:1308.6241.
- “Search for First Generation Leptoquarks at HERA”, ICHEP 2012, arXiv:1302.3378.
- “Search for Lepton Flavour Violation at HERA”, ICHEP 2012, arXiv:1302.3380.
- “The DPHEP Study Group: Data Preservation in High Energy Physics”, ICHEP 2012, arXiv:1302.3379.
- D. M. South, A. Weiler and H. Yoo, “Summary of the Electroweak and Searches Working Group”, DIS 2012, arXiv:1208.1468.
- D. M. South and M. Steder, “The H1 Data Preservation Project”, CHEP 2012, arXiv:1206.5200.
- “Data Preservation and Long Term Analysis in High Energy Physics”, CHEP 2012, arXiv:1206.5198.
- Z. Akopov *et al.* [DPHEP Study Group], “Status Report of the DPHEP Study Group: Towards a Global Effort for Sustainable Data Preservation in High Energy Physics”, arXiv:1205.4667.
- R. Kogler, D. M. South and M. Steder “Data Preservation in High Energy Physics”, ACAT 2011, arXiv:1111.2788.
- “Search for Lepton Flavour Violation at HERA”, DIS 2011, arXiv:1108.1134.
- “Data Preservation in High Energy Physics”, CHEP 2010, arXiv:1101.3186.
- “Multi-Leptons at HERA”, ICHEP 2010, arXiv:1011.5776.
- “Isolated Leptons and Single Top at HERA”, DIS 2010, arXiv:1006.4077.
- “High  $Q^2$  Measurements at HERA”, Lake Louise Winter Institute 2010, arXiv:1005.5729.
- T. Brooks *et al.* [DPHEP Study Group], “Data Preservation in High Energy Physics”, arXiv:0912.0255.
- C. Diaconu and D. M. South, “Study Group Considers How to Preserve Data” CERN Cour. **49N4** (2009) 21.
- “Isolated Lepton and Multi-Lepton Production at HERA”, HEP-EPS 2009, arXiv:0909.2957.
- “Data Preservation and Long Term Analysis in HEP”, 44th Rencontres de Moriond on QCD and High Energy Interactions, arXiv:0907.1586.
- “Searches for New Physics at H1”, ICHEP 2008, arXiv:0809.5010.
- “Single  $W$  and Anomalous Top Production at HERA”, Photons@LHC 2008, Nucl. Phys. Proc. Suppl. **179** (2008) 29 [arXiv:0806.0069].
- C. P. Hays, M. Kramer, D. M. South and A. F. Zarnecki, “Summary of the Electroweak and BSM Working Group”, DIS 2008, arXiv:0809.0679.
- “Isolated Leptons and Missing  $P_T$  at HERA”, HEP-EPS 2007, J. Phys. Conf. Ser. **110** (2008) 072041 [arXiv:0709.4433].
- “New H1 Results on Isolated Leptons and Missing  $P_T$  at HERA”, DIS 2006, hep-ex/0607020.
- “Searches for New Physics in  $ep$  Scattering at HERA”, 41st Rencontres de Moriond on Electroweak Interactions and Unified Theories, hep-ex/0605119.
- “Searches for New Physics at HERA”, Hadron Structure and QCD 2005, hep-ex/0602028.
- “SUSY Searches at H1”, DIS 2005, AIP Conf. Proc. **792** (2005) 599.
- “Events with High  $P_T$  Leptons and  $P_T^{\text{miss}}$  and Anomalous Top at HERA”, DIS 2004, Kosice Inst. of Exp. Phys. ISBN 80-88880-57-2 (2004) 1023.

## Seminars and Invited Talks

- ATLAS Distributed Computing: Current Activities, Future Plans and Fighting Covid-19 2020  
*Rydberg Seminar, Lund University, Sweden (virtual)*
- Data Preservation in High Energy Physics 2016  
*Helmholtz Workshop on the Non-thermal Universe, Erlangen, Germany*
- Data Preservation in High Energy Physics 2011  
*Keynote, DaLi 2011 Workshop at ICDE 2011, Hanover, Germany*
- Data Preservation and Long Term Analysis in HEP 2010  
*DESY-Zeuthen, TU Dortmund, Physikalisches Institut Bonn, Brookhaven National Laboratory*
- Isolated Leptons at HERA: An Unsolved Mystery 2007  
*Technische Universität Dortmund, Germany*
- Methods and Techniques in HEP and Analysis using H100 2006  
*DESY Student Seminar, Hamburg, Germany*

## Plenary Talks

- A Validation Framework for the Long Term Preservation of HEP Data *DESY-DPHEP Talk*  
*LOPS 2014, Chicago, USA* March 2014
- Data Preservation and Long Term Analysis in High Energy Physics *DPHEP Talk*  
*CHEP 2012, New York City, USA* May 2012
- Summary of the Electroweak and Searches Working Group *Conference Summary Talk*  
*DIS 2012, Bonn, Germany* March 2012
- Data Preservation in High Energy Physics *DPHEP Talk*  
*CHEP 2010, Taipei, Taiwan* October 2010
- W/Z Boson Physics from HERA *H1 and ZEUS Talk*  
*The Physics of W and Z Bosons, Brookhaven, USA* June 2010
- High  $Q^2$  Measurements at HERA *H1 and ZEUS Talk*  
*Lake Louise Winter Institute 2010, Alberta, Canada* February 2010
- Data Preservation and Long Term Analysis in HEP *DPHEP Talk*  
*44th Rencontres de Moriond (QCD), La Thuile, Italy* March 2009
- Single W and Anomalous Top Production at HERA *H1 and ZEUS Talk*  
*Photons@LHC 2008, CERN, Switzerland* April 2008
- Summary of the Electroweak and BSM Working Group *Conference Summary Talk*  
*DIS 2008, London, UK* April 2008
- Searches for New Physics in  $ep$  Scattering at HERA *H1 and ZEUS Talk*  
*41st Rencontres de Moriond (EW), La Thuile, Italy* March 2006
- Searches for New Physics at HERA *H1 and ZEUS Talk*  
*Hadron Structure and QCD 2005, St. Petersburg, Russia* September 2005

## Parallel Session Talks

- R&D in ATLAS Distributed Computing towards HL-LHC *ATLAS Talk*  
*CHEP 2023, Norfolk, USA* May 2023
- Running Folding@Home Covid-19 Simulations on ATLAS Resources *ATLAS Talk*  
*vCHEP 2021 (virtual)* May 2021
- The DPHEP Collaboration *DPHEP Talk*  
*HEP-EPS 2013, Stockholm, Sweden* July 2013
- The LHeC Detector *LHeC Talk*  
*DIS 2013, Marseille, France* April 2013
- DPHEP: From Study Group to Collaboration *DPHEP Talk*  
*DIS 2013, Marseille, France* April 2013
- Search for First Generation Leptoquarks at HERA *H1 Talk*  
*ICHEP 2012, Melbourne, Australia* July 2012

• Search for Lepton Flavour Violation at HERA <i>ICHEP 2012, Melbourne, Australia</i>	<i>H1 Talk</i> July 2012
• The DPHEP Study Group: Data Preservation in High Energy Physics <i>ICHEP 2012, Melbourne, Australia</i>	<i>DPHEP Talk</i> July 2012
• Search for Lepton Flavour Violation at HERA <i>DIS 2011, Newport News, USA</i>	<i>H1 Talk</i> April 2011
• Multi-Leptons at HERA <i>ICHEP 2010, Paris, France</i>	<i>H1 and ZEUS Talk</i> July 2010
• Isolated Leptons and Single Top at HERA <i>DIS 2010, Florence, Italy</i>	<i>H1 and ZEUS Talk</i> April 2010
• Isolated Lepton and Multi-Lepton Production at HERA <i>HEP-EPS 2009, Krakow, Poland</i>	<i>H1 and ZEUS Talk</i> July 2009
• Searches for New Physics at H1 <i>ICHEP 2008, Philadelphia, USA</i>	<i>H1 Talk</i> August 2008
• Isolated Leptons and Missing $P_T$ at HERA <i>HEP-EPS 2007, Manchester, UK</i>	<i>H1 and ZEUS Talk</i> July 2007
• New H1 Results on Isolated Leptons and Missing $P_T$ at HERA <i>DIS 2006, Tsukuba, Japan</i>	<i>H1 Talk</i> April 2006
• SUSY Searches at H1 <i>DIS 2005, Madison, USA</i>	<i>H1 Talk</i> April 2005
• Events with High $P_T$ Leptons and $P_T^{\text{miss}}$ and Anomalous Top at HERA <i>DIS 2004, Strbske Pleso, Slovakia</i>	<i>H1 Talk</i> April 2004

## Workshop and Review Talks

• ATLAS Computing Towards HL-LHC <i>WLCG Workshop, Lancaster, UK</i>	<i>ATLAS Talk</i> November 2022
• LHC Status, Schedule and Computing <i>92nd DESY PRC Open Session (virtual)</i>	<i>LHC Talk</i> November 2021
• H1 Data Preservation Status and Perspectives <i>DPHEP Collaboration Meeting (virtual)</i>	<i>H1 Talk</i> March 2021
• ATLAS Data Preservation: Plans and Activities <i>DPHEP Collaboration Meeting, CERN, Switzerland</i>	<i>ATLAS Talk</i> January 2015
• The HERA Inheritance: Lessons Learned from Data Preservation at DESY <i>8th Workshop on Data Preservation in HEP, CERN, Switzerland</i>	<i>DESY-DPHEP Talk</i> January 2014
• Data Preservation Activities at DESY <i>7th Workshop on Data Preservation in HEP, CERN, Switzerland</i>	<i>DESY-DPHEP Talk</i> March 2013
• Data Preservation Activities at DESY <i>6th Workshop on Data Preservation in HEP, CPPM, France</i>	<i>DESY-DPHEP Talk</i> November 2012
• Data Preservation Activities at DESY <i>5th Workshop on Data Preservation in HEP, Fermilab, USA</i>	<i>DESY-DPHEP Talk</i> May 2011
• HERA Data Preservation Activities <i>70th DESY PRC Open Session, DESY-Zeuthen, Germany</i>	<i>DESY-DPHEP Talk</i> October 2010
• Data Preservation Activities at DESY <i>4th Workshop on Data Preservation in HEP, KEK, Japan</i>	<i>DESY-DPHEP Talk</i> July 2010
• H1 Data Preservation Status <i>3rd Workshop on Data Preservation in HEP, CERN, Switzerland</i>	<i>H1 Talk</i> December 2009
• H1 Status Report <i>68th DESY PRC Open Session, DESY, Germany</i>	<i>H1 Talk</i> November 2009
• H1 Data Preservation Status <i>2nd Workshop on Data Preservation in HEP, SLAC, USA</i>	<i>H1 Talk</i> May 2009
• H1 Analysis and Computing Model <i>1st Workshop on Data Preservation in HEP, DESY, Germany</i>	<i>H1 Talk</i> January 2009

- H1 Status Report  
60th DESY PRC Open Session, DESY, Germany

*H1 Talk*  
November 2005

## Posters

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| • DPHEP: From Study Group to Collaboration<br><i>PV 2013, Frascati, Italy</i>                                   | <i>DPHEP Poster</i><br>November 2013     |
| • A Validation Framework for the Long Term Preservation of HEP Data<br><i>CHEP 2013, Amsterdam, Netherlands</i> | <i>DESY-DPHEP Poster</i><br>October 2013 |
| • A New Detector for Deep Inelastic Physics<br><i>HEP-EPS 2013, Stockholm, Sweden</i>                           | <i>LHeC Poster</i><br>July 2013          |
| • The H1 Data Preservation Project<br><i>CHEP 2012, New York City, USA</i>                                      | <i>H1 Poster</i><br>May 2012             |
| • Data Preservation in High Energy Physics<br><i>ACAT 2011, London, UK</i>                                      | <i>DPHEP Poster</i><br>September 2011    |
| • Physics Results from the H1 Experiment at HERA<br><i>Lepton Photon 2005, Uppsala, Sweden</i>                  | <i>H1 Poster</i><br>July 2005            |
| • Physics Results from the H1 Experiment at HERA<br><i>Lepton Photon 2003, Fermilab, USA</i>                    | <i>H1 Poster</i><br>August 2003          |