

Alexander Shires

Contact Information

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Education

Imperial College London, London, UK

Ph.D., High Energy Physics , *October 2013*

Thesis topic: *Exploring $b \rightarrow s$ electroweak penguins at LHCb*

Supervisor: Prof. Ulrik Egede

MSci, Physics with Theoretical Physics, *October 2009*

First Class degree

Masters project: *Topological Measures of the Cosmic Microwave Background*

Supervisor: Dr. Carlo Contaldi

Hardenhuish School, Chippenham, Wilts, UK

A-levels, August 2005

Physics (A), Maths (A), Further Maths(A), Chemistry(A)

GCSEs, August 2003

3 A*, 3 A, 3 B.

Professional Experience

TU Dortmund, Germany

Post-doctoral research assistant

June 2013 onwards

Work incorporated the measurement of R_K , the measurement of the S-wave contribution in $B^0 \rightarrow K^* \mu^+ \mu^-$ and developing the LHCb High Level Trigger.

Imperial College London, UK

Undergraduate research placement

June - Sept 2008

Developed and integrated autonomous remote testing for the Ganga project Added reporting options to show test failure differences between different versions.

Westinghouse Rail Systems, Chippenham, Wilts, UK

Junior Engineer

June - Sept 2006, June - Sept 2007

Worked as the sole data analyst for the first live railway trial of a multi-million pound project. Developed software to test the integration of a new railway track-side communications protocol.

Publications and selected results

D. Das, G. Hiller, M. Jung, and A. Shires, *The $\bar{B} \rightarrow \bar{K}\pi\ell\ell$ and $\bar{B}_s \rightarrow \bar{K}K\ell\ell$ distributions at low hadronic recoil*, [arXiv:1406.6681](#)

LHCb collaboration, R. Aaij *et al.*, *Test of lepton universality using $B^+ \rightarrow K^+\ell^+\ell^-$ decays*, [arXiv:1406.6482](#), to appear in Phys. Rev. Lett.

LHCb collaboration, R. Aaij *et al.*, *Differential branching fraction and angular analysis of the decay $B^0 \rightarrow K^{*0}\mu^+\mu^-$* , JHEP **08** (2013) 131, [arXiv:1304.6325](#)

T. Blake, U. Egede, and A. Shires, *The effect of S-wave interference on the $B^0 \rightarrow K^{*0}\ell^+\ell^-$ angular observables*, JHEP **03** (2013) 027, [arXiv:1210.5279](#)

LHCb collaboration, R. Aaij *et al.*, *Differential branching fraction and angular analysis of the decay $B^0 \rightarrow K^{*0}\mu^+\mu^-$* , Phys. Rev. Lett. **108** (2012) 181806, [arXiv:1112.3515](#)

Additional author on 155 papers as a member of the LHCb collaboration.

Invited Talks

A. Shires, *Searching for new physics in $b \rightarrow (s, d)\ell^+\ell^-$ transitions*, BSM Seminar series, Theoretical Physics group, TU Dortmund, Oct, 2014

A. Shires, *Rare heavy flavour decays at the LHC*, LHCb-TALK-2014-008. Frontiers in Particle Physics, Aspen

A. Shires, *Electroweak penguins at LHCb*, Bonn Seminar, October, 2013

A. Shires, *Exploring $B^0 \rightarrow K^{*0}\mu^+\mu^-$ at LHCb*, Seminar, High Energy Physics group, TU Dortmund, April, 2013

A. Shires, *Testing the helicity structure of new physics with rare decays at LHCb*, LHCb-TALK-2012-189. Spin-PRAHA

A. Shires, *Angular analysis of $B^0 \rightarrow K^{*0}\mu^+\mu^-$ at LHCb*, IOP HEPP Annual Meeting, April, 2012

Teaching Experience

- 2014 4th yr project supervision, TU Dortmund.
- 2014 3rd yr project supervision, TU Dortmund.
- 2014 PID Lecture, 4th yr particle detectors lecture course, TU Dortmund
- 2012 3rd yr Computational Physics Lab Demonstrator, Imperial College London.
- 2011 3rd yr Laboratory Demonstrator, Imperial College London.

Skills

C++, PYTHON, FORTRAN, SVN, Git, MS Office, L^AT_EX, Vim

Windows (XP, 7), Linux (Ubuntu, Scientific Linux)

Full, clean, UK Driving licence (2004).

Awards

STFC PhD Studentship, 2009

Westinghouse Rail Systems Centenary Scholarship, 2005

RJ Alderman Award for Maths (Hardenhuish School, 2005)

References available on request