

Employment

Postdoctoral researcher Dec 2017 – Feb 2020
CNRS and Aix-Marseille University (Olivier Leroy)

Postdoctoral research associate Aug 2017 – Nov 2017
University of Edinburgh (Greig Cowan)

Education

PhD in experimental particle physics Sep 2013 – Sep 2017
University of Edinburgh

Thesis title Measurements of charmless B_s meson decays at LHCb
Supervisors Matthew Needham and Franz Muheim

MSci in physics Oct 2009 – Jul 2013
University of Birmingham

Thesis title A possible lepton flavour violation search at NA62
Supervisors Cristina Lazzeroni and Evgueni Goudzovski

Contributions to LHCb physics analysis

Measurement of $R(D^*)$ using hadronic τ decays 2017 – 2020
Major contributions to all parts of the analysis as one of two full-time proponents

Amplitude analysis of $\Lambda_b \rightarrow \chi_{c\{1,2\}} p K^-$ decays 2017
Development of the amplitude fitter within the TensorFlowAnalysis framework.

Amplitude analysis of $B_s^0 \rightarrow \phi K^+ K^-$ decays 2015 – 2017
Primary thesis work and sole full-time proponent.

Measurement of the $B_s^0 \rightarrow \phi\phi$ branching fraction and search for $B^0 \rightarrow \phi\phi$ 2014 – 2015
Thesis work and sole full-time proponent.

Measurement of CP violation in $B_s^0 \rightarrow \phi\phi$ decays 2013 – 2014
Fits to the $\phi\phi$ invariant mass.

LHCb hardware work

Ion feedback monitoring 2015 – 2016
Periodic analysis of the level of ion feedback in the HPDs installed in the RICH to predict when they need to be replaced.

RICH upgrade testbeam 2014 – 2016
Participant in 4 testbeam periods, during which I took data-taking shifts and improved the automation of the data acquisition and processing. I also performed the dark count analysis and developed an online alignment tool.

Performance of MaPMTs in magnetic fields 2013 – 2014
Per-pixel efficiency measurements as a function of magnetic field strength. This work was the basis of the decision to use μ -metal shielding in the RICH upgrade.

Shifts and responsibilities in LHCb

MC production model manager 2019 –

Filtered MC liaison 2018 –

Semileptonic WG MC liaison 2018 –

Review Committee member 2018 – 2019

Measurement of the $\eta_c(1S)$ production cross-section at $\sqrt{s} = 13$ TeV

L0 trigger piquet shifts (3 weeks) 2018

Control room shifts (13 \times shift leader & 11 \times data manager) 2015 – 2018

RICH piquet shifts (3 weeks) 2015 – 2016

Skills

- HEP data analysis: multivariate selection, maximum-likelihood fits, amplitude analysis, template fits, limit-setting
- Proficiency with C++, Python and shell scripting.
- Proficiency with ROOT (incl. TMVA, RooFit and RooStats), GSL, Boost and the LHCb software
- Proficiency with version control systems (Git and SVN) and experience with collaborative software development
- Experience using distributed computing resources, such as the Edinburgh and CERN batch services and the LHC Grid
- Experience with analysis preservation and reproducibility tools (Snakemake, Docker, Continuous Integration)
- Experience testing the performance of photodetectors

Teaching and supervision

NB: by 'supervision' I do not imply official supervisor roles within the university, but day-to-day guidance and instruction.

Supervision of PhD student	2017 – 2020
Dawid Gerstel on the $R(D^*)$ hadronic measurement at Aix-Marseille University.	
Data acquisition and handling	2017
Electronics & programming lab demonstrator for undergraduate students at Edinburgh	
Numerical recipes	2017
Programming lab demonstrator for undergraduate students at Edinburgh	
Supervision of summer student	2015
Rebecca Carrahar at the RICH upgrade testbeam	
Supervision of summer student	2014
Viktoria Hinger in the MaPMT testing lab at Edinburgh	
Supervision of masters student	2013 – 2014
Josh Neill in the MaPMT testing lab at Edinburgh	

Public outreach

Participant representing LHCb in an 'Ask Me Anything' session organised by CERN on <i>reddit.com</i>	May 2015
Participant in a <i>Speed Science</i> event at the <i>Glasgow Science Festival</i>	June 2014
Demonstrator at the <i>Discovering the Higgs Boson</i> exhibit at the <i>Big Bang Fair</i> , Birmingham NEC	March 2014

Presentations at conferences and workshops

GDR Intensity Frontier Annual Meeting	Sommières, November 2019
Talk: <i>Lepton flavour universality in $b \rightarrow c$ transitions</i>	
European Physical Society Conference on High Energy Physics (EPS-HEP)	Ghent, July 2019
Talk: <i>CP violation in multi-body charmless b-hadron decays at LHCb</i>	
XIII Franco-Italian Meeting on B Physics	Aix-Marseille University, October 2018
Talk: <i>Lepton flavour universality violating B decays in trees</i>	
10th International Workshop on the CKM Unitarity Triangle	Heidelberg University, September 2018
Talk: <i>Tests of lepton flavour universality using semitauonic B decays at LHCb</i>	
PyHEP 2018	Sofia, July 2018
Talk: <i>Using TensorFlow for amplitude fits</i>	
Heavy Quarks and Leptons (HQL)	Virginia Tech, May 2016
Talk: <i>Charmless b-meson and b-baryon decays at LHCb</i>	
LHCC Poster Session	CERN, March 2016
Poster: <i>Measurement of the $B_s \rightarrow \phi\phi$ branching fraction and angular analysis of $B_s \rightarrow \phi\pi^+\pi^-$ at LHCb</i>	
UK HEP forum: "Anomalies and Deviations"	STFC, Abingdon, November 2015
Poster: <i>Measurement of the $B_s \rightarrow \phi\phi$ branching fraction and search for $B^0 \rightarrow \phi\phi$ at LHCb</i>	
B-physics at frontier machines (Beauty)	University of Edinburgh, July 2014
Poster: <i>Measurement of CP violation in $B_s^0 \rightarrow \phi\phi$ decay</i>	

Schools attended

Ecole de Gif	Clermont-Ferrand, September 2018
IN2P3 School Of Statistics	La Londe Les Maures, May 2018
European School of High-Energy Physics	Bansko, September 2015
Young Experimentalists and Theorists Institute (YETI)	Durham University, January 2015
STFC HEP summer school	University of Warwick, September 2014

Papers

Characterisation and magnetic field properties of multianode photomultiplier tubes,
S. Eisenhart *et al*, NIM **A766** (2014) 167-170

Measurement of CP violation in $B_s^0 \rightarrow \phi\phi$ decays,
LHCb collaboration, PRD **90**, (2014) 052011

Measurement of the $B_s^0 \rightarrow \phi\phi$ branching fraction and search for the decay $B^0 \rightarrow \phi\phi$,
LHCb collaboration, JHEP **10** (2015) 053

Test of the photon detection system for the LHCb RICH Upgrade in a charged particle beam,
M. K. Baszczyk *et al*, JINST **12** (2017) 01012

Oscillations of B_s^0 mesons as a probe of decays with invisible particles,
A. Poluektov and A. Morris, arXiv:1911.12729 [hep-ph], submitted to JHEP

Proceedings

Measurement of CP violation in $B_s^0 \rightarrow \phi\phi$ decays,
A. Morris, on behalf of the LHCb collaboration, PoS (Beauty 2014) 064

Charmless b -meson and b -baryon decays at LHCb,
A. Morris, on behalf of the LHCb collaboration, PoS (HQL 2016) 059

Using TensorFlow for amplitude fits,
A. Morris, on behalf of the TensorFlowAnalysis developers, DOI:10.5281/zenodo.1415413

CP violation in multi-body charmless b -hadron decays at LHCb,
A. Morris, on behalf of the LHCb collaboration, PoS (EPS-HEP 2019) 215

Online profiles

CERN GitLab: gitlab.cern.ch/admorris

GitHub: github.com/abmorris

Inspire HEP: inspirehep.net/author/profile/A.B.Morris.1

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