Matthew Black

Curriculum Vitae

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https://github.com/mbr-phys

EDUCATION

2016 – 2020 **Master of Physics (MPhys)**
FIRST CLASS HONOURS
Theoretical Physics
University of Durham

2009 – 2016 **Secondary Education**
The High School of Glasgow

POSITIONS

MARCH 2021 – PRESENT (FT)

Universität Siegen
PhD Student

I am currently working as a PhD student in the TP1 research group for particle physics at Universität Siegen, focusing on lattice simulations of QCD. This role involves participating in research projects requiring strong dedication and focus. I work with others both within the TP1 group and internationally to complete research, and also as part of larger collaborations focused on delivering high precision lattice results. Further research interests include new physics models and quantum computation for high energy physics.

RESEARCH WORKS

See iNSPIRE-HEP/Matthew Black.

➥ **M. Black**, R. Harlander, F. Lange, A. Rago, A. Shindler and O. Witzel, *Using Gradient Flow to Renormalise Matrix Elements for Meson Mixing and Lifetimes*, PoS LATTICE2023 XXX, [arXiv:2310.XXXX [hep-lat]]

➥ **M. Black**, O. Witzel, *B Meson Decay Constants Using Relativistic Heavy Quarks*, PoS LATTICE2022 405, [arXiv:2212.10125 [hep-lat]]

➥ **M. Black**, A. D. Plascencia and G. Tetlalmatzi-Xolocotzi, *Enhancing $B_s \to e^+e^-$ to an Observable Level in the Two-Higgs-Doublet Model*, Phys.Rev.D 107 (2023) 3 035013, [arXiv:2208.08995 [hep-ph]]

➥ O. Atkinson, **M. Black**, C. Englert, A. Lenz and A. Rusov, *MUonE, muon $g-2$ and electroweak precision constraints within 2HDMs*, Phys.Rev.D 106 (2022) 11 115031, [arXiv:2207.02789 [hep-ph]]

➥ O. Atkinson, **M. Black**, C. Englert, A. Lenz, A. Rusov and J. Wynne, *The Flavourful Present and Future of 2HDMs at the Collider Energy Frontier*, JHEP 11 (2022) 139, [arXiv:2202.08807 [hep-ph]]

➥ O. Atkinson, **M. Black**, A. Lenz, A. Rusov and J. Wynne, *Cornering the Two Higgs Doublet Model Type II*, JHEP 04 (2022) 172, [arXiv:2107.05650 [hep-ph]]

COMPUTER SKILLS

INTERMEDIATE Fortran, Perl, HTML

EXPERT Python, C++, Unix, LaTeX

FURTHER EXPERIENCES

Teaching Assistance

Throughout my Masters and PhD, I have taken up teaching assistant duties for various courses. These include 'Scientific Programming' and 'Practical Lab: Intro to Lattice QCD', as well as advising a Bachelors student in their thesis. I have lent my knowledge of particle physics and programming in languages such as C++ and Python to good use in order to educate students and advance their own academic careers.

Systems Administrator

During my time at UniSiegen, I have taken on responsibilities as part of the Sys Admin team managing and maintaining the computer systems of the TP1 group. This involves educating users on working with Linux systems and providing assistance and new services as needed by the group.

REFERENCES

Dr. Alexander Lenz
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Universität Siegen
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Dr. Oliver Witzel
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Dr. Robert Harlander
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