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arXiv

EMPLOYMENT	Postdoctoral Scientist <i>The George Washington University</i>	Sept. 2019 - Present
	Research Assistant <i>Carnegie Mellon University</i>	Sept. 2017 - July 2019
	Teaching Assistant <i>Carnegie Mellon University</i>	Sept. 2015 - May 2018
EDUCATION	Ph.D. Physics , Carnegie Mellon University - <i>Thesis</i> : The Scalar Glueball and $K\pi$ Scattering From Lattice QCD - <i>Advisor</i> : Prof. Colin Morningstar	2015 - 2019
	M.Sc. Physics , Carnegie Mellon University	2015 - 2017
	B.A. (Mod.) Theoretical Physics , Trinity College Dublin - First Class Honours - <i>Thesis</i> : Binder Cumulants for the Ising Model using Worm algorithms	2011 - 2015
SELECTED AWARDS	John Peoples Jr. Presidential Fellowship in Physics 2018/2019	
	CMU Physics Graduate Student Teaching Award 2018	
	Student Seminar Best Speaker Award 2nd place, Hampton University Graduate Summer Program (HUGS), Jefferson Lab 2017	
	TCD First Class Honours Book Prize 2012 & 2014	
INVITED TALKS	TCD Dean of Students' Roll of Honour 2014	
	<i>From two to three-body systems in lattice QCD</i>	
	MIT Virtual Lattice Field Theory Colloquium Series	July 2020
	S@INT, Institute for Nuclear Theory, Seattle, WA	March 2020
	Nuclear Theory Seminar, Lawrence Berkeley National Lab, Berkeley, CA	March 2020
	<i>Excited State Spectroscopy and Meson-Meson Scattering from Lattice QCD</i>	
	Theory Seminar, Carnegie Mellon University, Pittsburgh, PA	Feb 2019
TEACHING EXPERIENCE	Nuclear Seminar, The George Washington University, Washington, DC	Feb 2019
	<i>Carnegie Mellon University:</i> 33-151/33-152 Matter & Interactions 1/2	Sept. 2015 - May 2018
	- Designed and taught lectures - Designed and led recitation sessions - Course material preparation: exams, assignments, etc.	

PUBLICATIONS Validation of the finite-volume quantization condition for two spinless particles

F. X. Lee, A. Alexandru, *R. Brett*
arXiv:2107.04430 [hep-lat]

Three-body dynamics of the $a_1(1260)$ resonance from lattice QCD

M. Mai, A. Alexandru, *R. Brett*, C. Culver, M. Döring, F. X. Lee, D. Sadasivan
arXiv:2107.03973 [hep-lat]
Phys.Rev.Lett. 127 (2021) 22, 222001

Three-body interactions from the finite-volume QCD spectrum

R. Brett, C. Culver, M. Mai, A. Alexandru, M. Döring, F. X. Lee
arXiv:2101.06144 [hep-lat]
Phys. Rev. D 104 (2021) 1, 014501

Finite-volume energy spectrum of the $K^- K^- K^-$ system

A. Alexandru, *R. Brett*, C. Culver, M. Döring, D. Guo, F. X. Lee, M. Mai.
arXiv:2009.12358 [hep-lat]
Phys. Rev. D 102 (2020) 11, 114523

Setting the scale for nHYP fermions with the Lüscher-Weisz gauge action

H. Niyazi, A. Alexandru, F. X. Lee, *R. Brett*.
arXiv:2008.13022 [hep-lat]
Phys. Rev. D 102 (2020) 9, 094506

Three pion spectrum in the $I = 3$ channel from lattice QCD

C. Culver, M. Mai, *R. Brett*, A. Alexandru, M. Döring.
arXiv:1911.09047 [hep-lat]
Phys. Rev. D 101 (2020) 11, 114507

The Scalar Glueball and $K\pi$ Scattering from Lattice QCD

R. Brett
PhD. Thesis

Determination of s - and p -wave $I = 1/2$ $K\pi$ scattering amplitudes in $N_f = 2 + 1$ lattice QCD

R. Brett, J. Bulava, J. Fallica, A. Hanlon, B. Hörz, C. Morningstar.
arXiv:1802.03100 [hep-lat]
Nucl. Phys. B **932**, 29 (2018)

Estimating the two-particle K -matrix for multiple partial waves and decay channels from finite-volume energies

C. Morningstar, J. Bulava, B. Singha, *R. Brett*, J. Fallica, A. Hanlon, B. Hörz.
arXiv:1707.05817 [hep-lat]
Nucl. Phys. B **924**, 477 (2017)

CONFERENCE HIGHER ORDER QUANTIZATION CONDITIONS FOR TWO SPINLESS PARTICLES

PROCEEDINGS F. X. Lee, A. Alexandru, *R. Brett*
arXiv:2110.03750 [hep-lat]

Including Tetraquark Operators in the Low-Lying Scalar Meson Sectors in Lattice QCD

D. Darvish, *R. Brett*, J. Bulava, J. Fallica, A. Hanlon, B. Hörz, C. Morningstar.
arXiv:1909.07747 [hep-lat]
AIP Conf. Proc. 2249 (2020) 1, 030021

Spectroscopy From The Lattice: The Scalar Glueball

R. Brett, J. Bulava, D. Darvish, J. Fallica, A. Hanlon, B. Hörz, C. Morningstar.
arXiv:1909.07306 [hep-lat]
AIP Conf. Proc. 2249 (2020) 1, 030032

$K\pi$ scattering and excited meson spectroscopy using the Stochastic LapH method

R. Brett, J. Bulava, J. Fallica, A. Hanlon, B. Hörz, C. Morningstar.
arXiv:1810.11311 [hep-lat]
PoS (LATTICE2018) 071

Scattering phase shift determinations from a two-scalar field theory and resonance parameters from QCD scattering

D. Darvish, *R. Brett*, J. Bulava, J. Fallica, A. Hanlon, C. Morningstar.
arXiv:1810.11433 [hep-lat]
PoS (LATTICE2018) 070

Scattering from finite-volume energies including higher partial waves and multiple decay channels

R. Brett, J. Bulava, J. Fallica, A. Hanlon, B. Hörz, C. Morningstar, B. Singha.
arXiv:1710.04169 [hep-lat]
EPJ Web Conf. **175**, 05005 (2018)