USQCD baseline LoI (Andreas Kronfeld on behalf of USQCD)

Status and Future Perspectives for Lattice Gauge Theory Calculations to the Exascale and Beyond

Bálint Joó,[1,*] Chulwoo Jung,[2,†] Norman H. Christ,[3] William Detmold,[4] Robert G. Edwards,[1] Martin Savage,[5] and Phiala Shanahan[4]

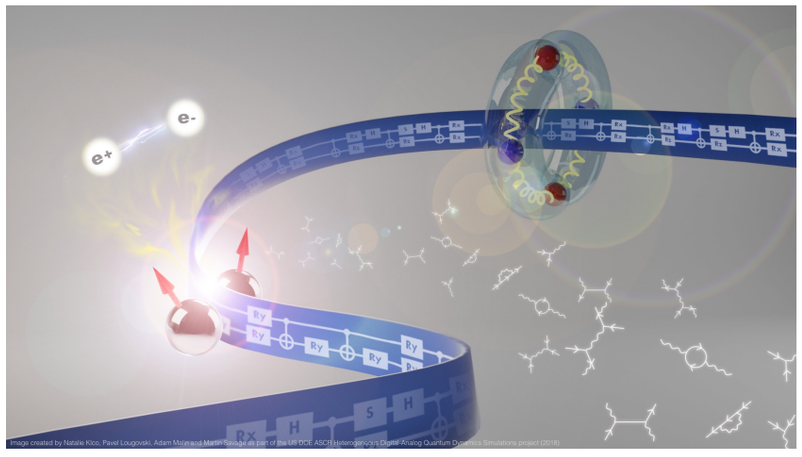
(USQCD Collaboration)

[1] *Theory Center, Thomas Jefferson National Accelerator Facility, Newport News, VA 23606*
[2] *Physics Department, Brookhaven National Laboratory, Upton, NY 11973*
[3] *Department of Physics, Columbia University, New York, NY 10027*
[4] *Department of Physics, Massachusetts Institute of Technology, Cambridge, MA 02139*
[5] *Institute for Nuclear Theory, University of Washington, Seattle, WA 98195-1550*

(Dated: November 26, 2019)

Abstract

In this and a set of companion whitepapers, the USQCD Collaboration lays out a program of science and computing for lattice gauge theory. These whitepapers describe how calculation using lattice QCD (and other gauge theories) can aid the interpretation of ongoing and upcoming experiments in particle and nuclear physics, as well as inspire new ones.



* Editor, bjoo@jlab.org
† Editor, chulwoo@bnl.gov

- Expect and encourage LoI's from theorists and collaborations across USA adding to this.
- More letters better (aware of):
  - Riken-Brookhaven-Columbia
  - Fermilab-MILC
- Raised on ECP algorithms and software calls ($2M per year currently funded via USQCD till 2023).
- Make case for post-ECP continued funding for algorithm development effort and high performance and portable software development effort to nurture and sustain physics programme.
- Realising the promise of post-Exascale computers is key to scientific advance.
- Post-doctoral positions but also lab positions and possible lab-university joint appointments.