MLMC: Machine Learning Monte Carlo for Lattice Gauge Theory

Sam Foreman,[a,*] **Xiao-Yong Jin**[a,b] **and James C. Osborn**[a,b]

[a]*Leadership Computing Facility, Argonne National Laboratory,*
  9700 S. Cass Ave, Lemont IL, USA

[b]*Computational Science Division, Argonne National Laboratory,*
  9700 S. Cass Ave, Lemont IL, USA

  E-mail: foremans@anl.gov, xjin@anl.gov, osborn@alcf.anl.gov

We present a trainable framework for efficiently generating gauge configurations, and discss ongoing work in this direction. In particular, we consider the problem of sampling configurations from a 4D $SU(3)$ lattice gauge theory, and consider a generalized leapfrog integrator in the molecular dynamics update that can be trained to improve sampling efficiency.

---

*Speaker

1. ...

References

[1] ....