

Propagator generation with Chroma+QUDA for various fermion actions

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We will present how to calculate propagators on Chroma with overlap and HISQ (highly improved staggered quark) valence quark, which are not fully supported on Chroma before. For overlap, we setup the fermion action based on polynomials of hwilson action, create overlap dslash on QUDA, migrate Arnoldi algorithm from gwu-code to solve the eigensystem for deflation, and migrate multishift algorithm to calculate propagators with different mass. For HISQ, we write an interface between Chroma and QUDA to put the inversion on GPU and accelerate the calculation. The multigrid algorithm is also used for the HISQ inversion.

Primary author: Mr 张, 宽 (中国科学院理论物理所)

Presenter: Mr 张, 宽 (中国科学院理论物理所)

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