Numerical Challenges in Lattice QCD 2022



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The following questions emerged from an e-mail discussion with Gustavo Ramirez:

1) Deflation (with approximate projection) as a multigrid method seems tricky to be ported to GPU architectures in an efficient way.

2) Can one understand why ? Is that solely due to the poor scalability of the 'little Dirac operator' ?

3) Isn't that then a general problem for multigrid methods on GPU ? The same scalability issue should be present for the near-kernel Dirac operator.

4) Are there more ideal solvers for pure GPU architectures (not hybrid CPU-GPU) ?

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