

English HW

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1 Direct optimization of BPX preconditioners

References

- [1] I. Oseledets and V. Fanaskov, “Direct optimization of bpx preconditioners,” *Journal of Computational and Applied Mathematics*, vol. 402, p. 113811, 2022.

Large linear system are often hard to solve with direct methods, so it is better to use iterative ones. But as iterative methods demand the linear system matrix directly, the success of the method strongly depends on condition number of the linear system. Unfortunately, due to discretizaion issues, linear system matrices are often ill-conditions. That is why we need preconditioners. One of them I find this paper[1] good, as it has rather novel idea for NN. Earlier “this approach was depicted in solving ODE, and now we apply it to NN”. However, implementation of this algorithm may be a challenging experience.