
Do you precondition on the left or on the right ?

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Abstract

The idea behind preconditioning is to accelerate a linear solver by providing it with an approximate inverse of the problem matrix. There are two main ways to precondition the problem $Ax = b$. Letting H be the preconditioner :

* either, $HAx = Hb$ is solved (left preconditioning),

* or, $AHu = b$ is solved and the solution is $x = Hu$ (right preconditioning).

Split preconditioning is also an option.

The goal of this poster is to present similarities and differences between left, right and split preconditioning. We also aim to start a conversation about whether there is a best choice and what your practices are when it comes to preconditioning.

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