

M.Sc. Simulation Sciences, Summer Semester 2023

Fast Iterative Solvers

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Project 1 - Work Package 1

Write a function that implements a matrix-vector product for a matrix stored in MSR format.

Hints:

- This should work for both non-symmetric and symmetric matrices.
- for symmetric matrices we store only one triangle
- You need to account for symmetry by modifying the matrix-vector product
- This can be done by combining CSR and CSC matrix-vector products in an appropriate manner, as discussed in class.
- Test your implementation. (The small test matrix which was used in the tutorial can be used for that purpose.)