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Scalable I/O for Firedrake and PETSc

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One important aspect of scientific and engineering simulations is scalable input/output of solutions. In this work we enhanced HDF5 input/output capabilities of Firedrake[1] and PETSc to allow for saving/loading finite element solutions in association with the mesh of the computational domain efficiently in parallel. Particularly, our new implementation allows for using different number of MPI processes for saving and for loading. Transparent interfaces for mesh extrusion and timestepping problems are also provided.

REFERENCES

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