

hypre

Lawrence Livermore National Laboratory



Highly scalable multilevel solvers and preconditioners. Unique user-friendly interfaces. Flexible software design. Used in a variety of applications. Freely available.

- **Conceptual interfaces**

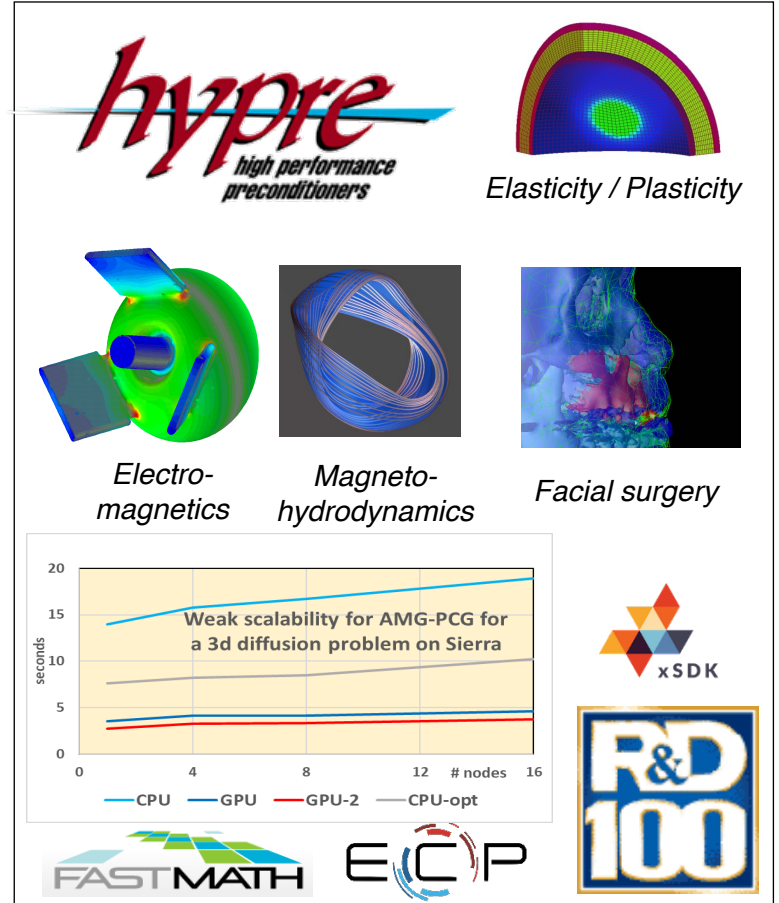
- Structured, semi-structured, finite elements, linear algebraic interfaces
- Provide natural “views” of the linear system
- Provide for more efficient (scalable) linear solvers through more effective data storage schemes and more efficient computational kernels

- **Scalable preconditioners and solvers**

- Structured and unstructured algebraic multigrid solvers
- Maxwell solvers, H-div solvers
- Multigrid solvers for nonsymmetric systems: pAIR, MGR
- Matrix-free Krylov solvers

- **Open source software**

- Used worldwide in a vast range of applications
- Can be used through PETSc and Trilinos
- Provide CPU and GPU support
- Available on github: <https://www.github.com/LLNL/hypre>



<http://www.llnl.gov/CASC/hypre>