

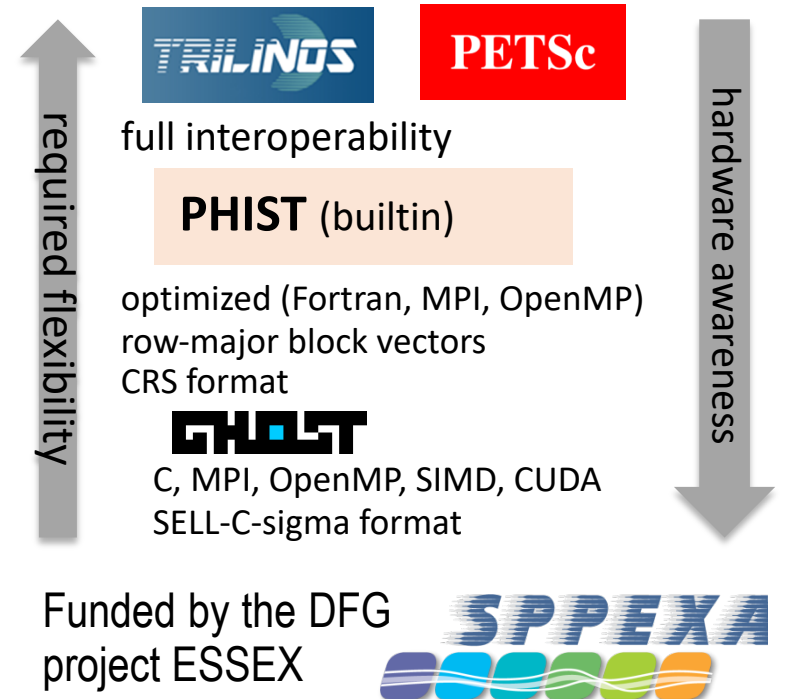
Hybrid-parallel Iterative Sparse Eigenvalue and linear solvers Integration with different linear algebra backends and preconditioners

- **Sparse Eigenvalue Solver: Block Jacobi-Davidson QR**
 - Hermitian or non-Hermitian matrices
 - Generalized problems $\mathbf{Ax} = \lambda\mathbf{Bx}$ (for Hermitian pos. def. matrix \mathbf{B})
 - Blocked iterative linear solvers like GMRES, BiCGStab and CGMN
 - Can be accelerated by preconditioning
 - Matrix-free interface
 - Supported data types: D, Z, S, C

- **Algorithmic Building Blocks**
 - block orthogonalization
 - Eigenvalue counting (kernel polynomial method/KPM)
 - Fused basic operations for better performance

- **Various interfaces**
 - C, C++, Fortran 2003, Python

Can choose from several backends
at compile time



<https://bitbucket.org/essex/phist>