Parallel vector of 1D Jacobi

\[ p = \#\text{processes} \]

In each iteration:
1) Communicate ghost values
2) Update Jacobi (local)

Repeat

Interleave Communication with Computation

Unblocking version:
1) Start communicating ghost values, iSend iRecv
2) Unew interior Jacobi updates (local) does not require ghost values
3) Finish communication (MPI_Wait)
4) Update 2 remaining entries (first & last)
Shared memory parallel computing — OpenMP

Distributed memory parallel — MPI (same node)

Communication through network
Hybrid model:

- Distributed, 2 MPI tasks, each task has multiple threads.

MPI Communication:

- Process 0
- Process 1