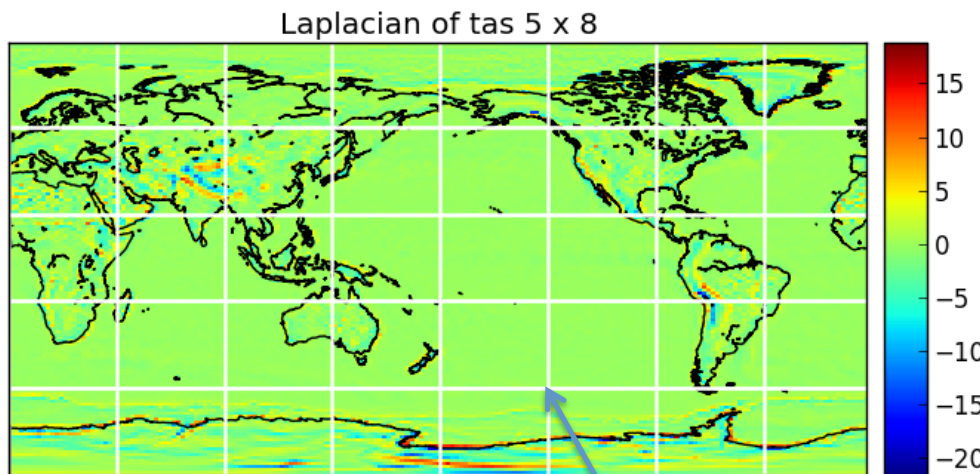

Distributed Arrays



Using Distributed Arrays to Identify Cold/Warm Fronts

- Complements ParCAT when communication across processors is required
- Fully integrated into UV-CDAT, CDMS2 variables are multi-processor aware
- Works on N-dimensional arrays (not restricted to 2D or 1D)
- Supports any ghost width (useful for high order discretization schemes)
- Any processor rank can access data stored on any other processor rank
- Based on mpi4py MPI-2 remote memory access, one-sided (pull) communication
- Good scaling on clusters

Laplacian filter applied to HadGEM2 atm. data to identify regions of cold/warm fronts



A 128 times bigger problem can be solved with only 20% more wall clock time

