

Guiding principle: “Owner computes” paradigm. Given an index space $1 \dots N$ (and vectors defined on this index space):

- ① The index space is partitioned among processes;
- ② Each index has a “home” process;
- ③ The “home” process holds the authoritative value of the corresponding vector entry;
- ④ The “home” process performs the arithmetic operations needed to set the value of a vector entry;
- ⑤ On each process, the set of “resident” indices will have a local numbering;
- ⑥ There is a map between global and local indices; the map is (usually) one-to-one when restricted to “home” processes;
- ⑦ There is a certain amount of redundancy due to “halo” indices (see below)