#梅田　隆行 [1)]
[(1] 名大 ISEE

Multicolor reordering for computing moments in particle-in-cell plasma simulations

#Takayuki Umeda[1)]
[(1]ISEE, Nagoya Univ.

Thread parallelism in the computation of the current density/charge density in particle-in-cell plasma simulations has been performed by using the reduction operation conventionally, which is known to have a larger computational overhead with a larger number of threads. In the present study, two types of multicolor reordering, i.e., loop striding loop tiling/blocking are introduced for a particle shape function with an arbitrary degree, which is free from the reduction operation. The present performance measurement result suggests that the loop tiling is superior to the loop striding.