The above figure shows the overall performance for weak scaling test. For this test, the size of world is changed for several times. And since the size of world increases, the number of ranks that needed to handle the data also increases which also due to the increase of the number of nodes. Basically, the difference between file reading and writing for CPU via MPI and hybrid CPU/GPU is not very obvious, because they all use MPI I/O to do file reading and writing and the number of node for each similar test is the same. However, CPU via MPI spends more time on computing than hybrid CPU/GPU because CPU via MPI uses a sequential way to do computation, while hybrid CPU/GPU uses a parallel way.