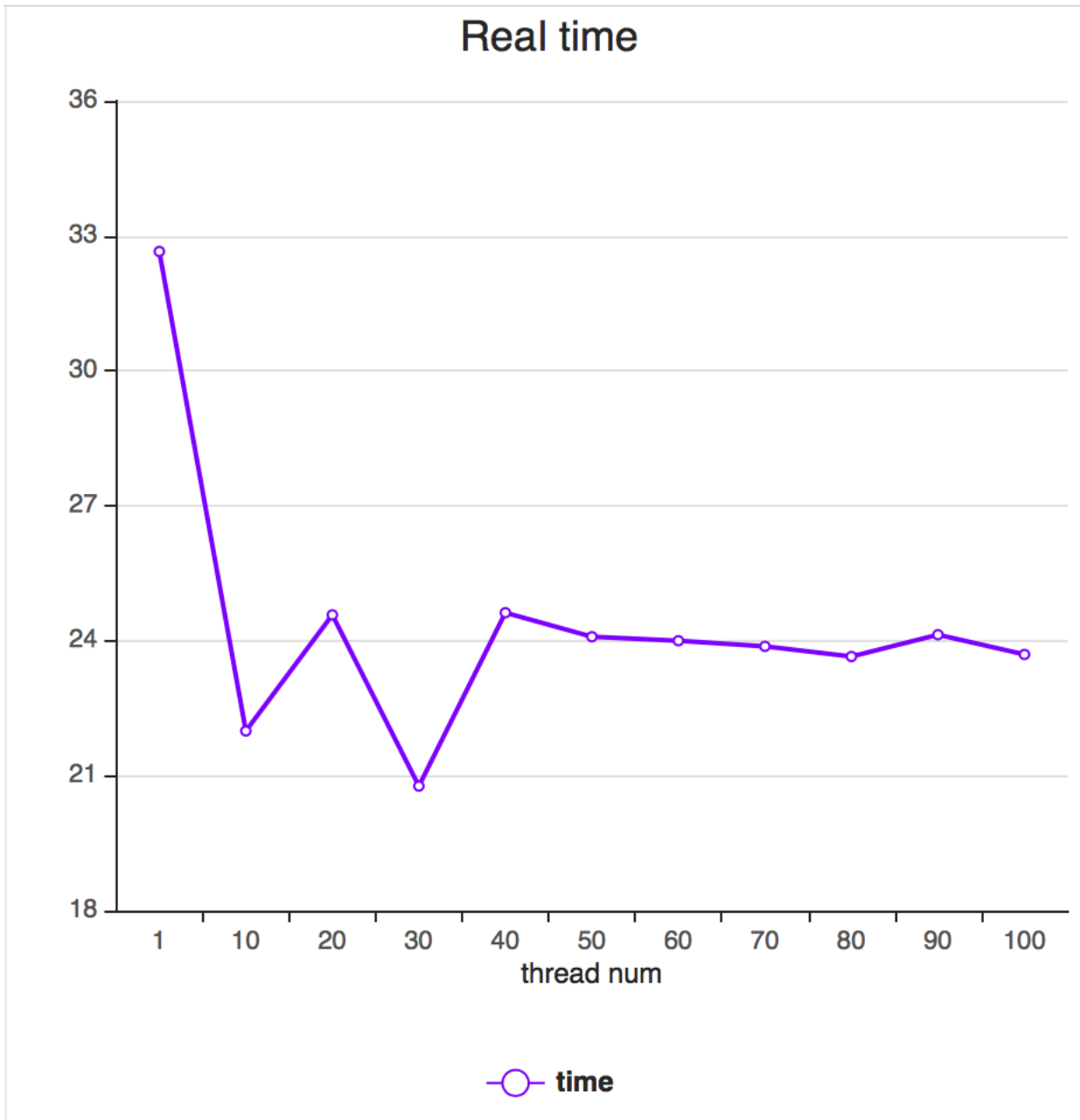


SPHW4

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1 Compare the execution time with different thread number



I use a shell script to know the execution time with thread number of 1, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, and find out that the real time of execution will be lower dramatically

when it changes from 1 thread to 10 threads. However, with the increase of thread number from 10 to 100, the running time will not definitely be lower with the increase of thread number, it may be caused by more times of context switch or multiple process accessing share resource at the same time.

2 Compare the instructions number with different thread numbers



I use a shell script to know the instruction number with thread number of 1, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, and find out that with the increase of thread number, the instruction

number will increase (since we call more *pthread create()* function and more *pthread join()* function). However, it will not always increase with the increase of thread number, since there may be thread number which is not divisible.

3 Any other parallel method ?

In addition to row parallel for matrix multiplication part, we can also use column parallel to do matrix multiplication, divide the matrix into submatrices and assign to multiple threads, or also use thread to do other parts of the calculation. However, the performance of column parallel will not be better than that of using row parallel since row parallel will have continuous memory access. Using thread to do other parts of the calculation will cost less time but the instruction number might be higher.