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Multithreading

Most of the processors have multiple cores, so using multiple threads can directly speedup the calculation, with almost linear scaling. For this, OpenMP library is used. On the large scale computational systems we have observed that the first significant drop from scaling linearity is when the memory needs to be accessed from different boards. As FDTD is quite simple, but memory transfers demanding, this performance drop is significant, so in practice we rarely use GSvit on more than 16 cores at the same time. This might differ if your HPC system is using a different architecture.

To use the mutithreading, set the number of threads in the Basic parameters menu (in XSvit graphical user interface) or use the THREADS directive if you write the parameter file directly.

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