OpenFOAM (Open-Source Version) Compilation Instructions

I. Instructions before compiling

1) This solver is based on OpenFOAM-6, so please install OpenFOAM-6 before compiling this solver;
2) Copy the zip file "fasion-6" to the existing OpenFOAM folder and extract it to get the folder "fasion-6".

It should be noted that "fasion" is the author's username, and you need to change the "fasion" to the username of your own system after the copy is completed.

II. Compilation process

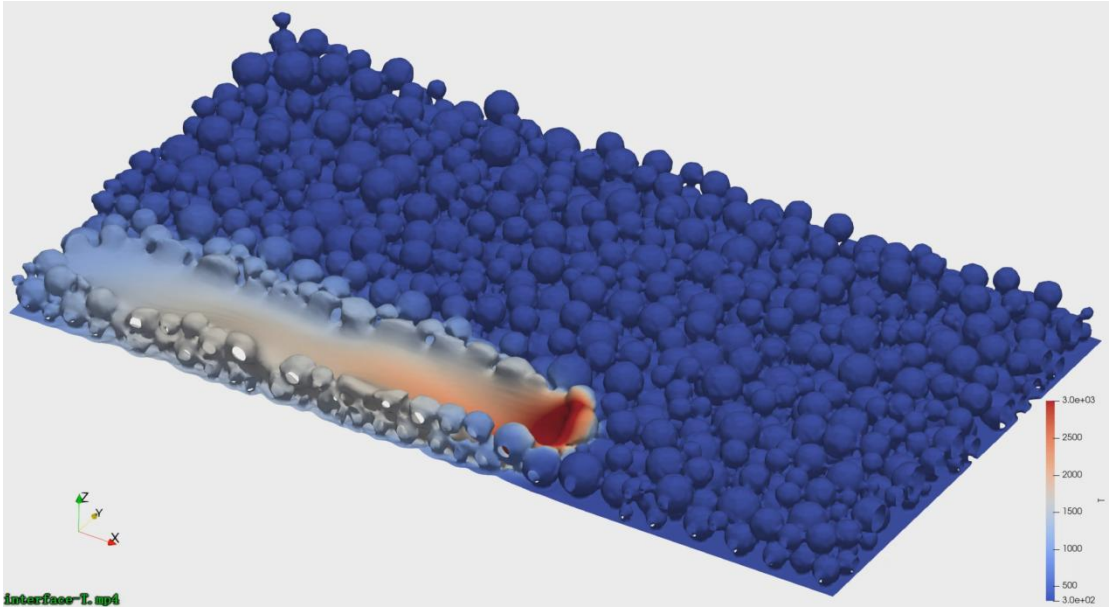
1) Enter directory "fasion-6\run\1-bc\caoliuConvectionFvPatchScalarField", run command "wmake";
2) Enter directory "fasion-6\run\0-solvers\singleLaserSLMCaoLiuFoam\incompressible", run command "wmake";
3) Enter directory "fasion-6\run\0-solvers\singleLaserSLMCaoLiuFoam\immiscibleIncompressibleTwoPhaseMixture", run command "wmake";
4) Enter directory "fasion-6\run\0-solvers\singleLaserSLMCaoLiuFoam\TurbulenceModels\incompressible", run command "wmake";
5) Enter directory "fasion-6\run\0-solvers\singleLaserSLMCaoLiuFoam\singleLaserSLMCaoLiuFoam", run command "wmake";
6) Enter directory

"fasion-6\run\0-solvers\multiLaserSLMCaoLiuFoam\multiLaserSLMCaoLiuFoam", run command "wmake";

7) So far, Four custom library files will appear under the directory "fasion-6\platforms\linux64GccDPInt32Opt\lib", and two custom solvers will appear under the directory "fasion-6\platforms\linux64GccDPInt32Opt\bin". The compilation is complete.

III. Use of the solvers

1) In the directory "fasion-6\run\2-case", there are two solver cases. test_multiLaserSLMCaoLiuFoam is used to predict the SLM forming process under the action of a single laser, and test_singleLaserSLMCaoLiuFoam is used to predict the SLM forming process under the action of multiple lasers;
2) Enter the folder "fasion-6\run\2-case\test_singleLaserSLMCaoLiuFoam", run the command "./Allrun_noParallel" to start single-core computation (if it doesn't work, please run "chmod +x Allrun_noParallel" first, then run "./Allrun_noParallel"), run "./Allrun_parallel" to start multi-core computation (if it doesn't work, please run "chmod +x Allrun_parallel" first, then run "./Allrun_parallel"; it is recommended to use multi-core computation for large amount of computation). The result of computation at a certain moment is as follows:



3) Enter the folder "fasion-6\run\2-case\test_multiLaserSLMCaoLiuFoam", run the command "./Allrun_noParallel" to start single-core computation (if it doesn't work, please run "chmod +x Allrun_noParallel" first, then run "./Allrun_noParallel"), run "./Allrun_parallel" to start multi-core computation (if it doesn't work, please run "chmod +x Allrun_parallel" first, then "./Allrun_parallel" command; it is recommended to use multi-core computation for large amount of computation). The result of the computation at a certain moment is as follows: