OpenFOAM (Open-Source Version) Instructions for Use

I. Instructions before calculation

1) This example is based on OpenFOAM-9, so please install OpenFOAM-9 before calculating this example;
2) Copy the folder "spatterBehaviorPredictSLM_CaoLiu" to any local location.

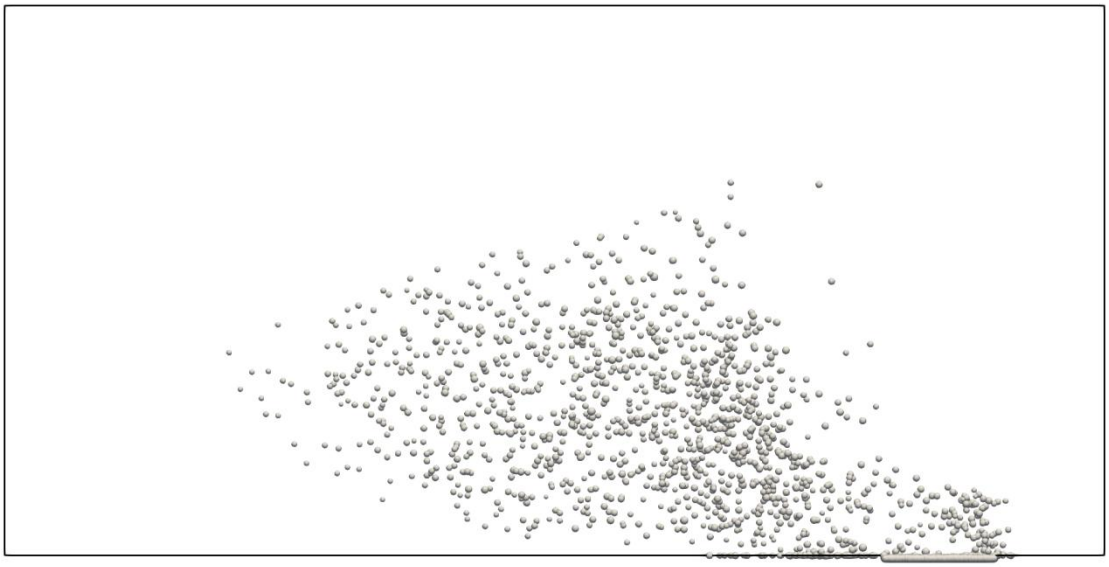
II. Running example

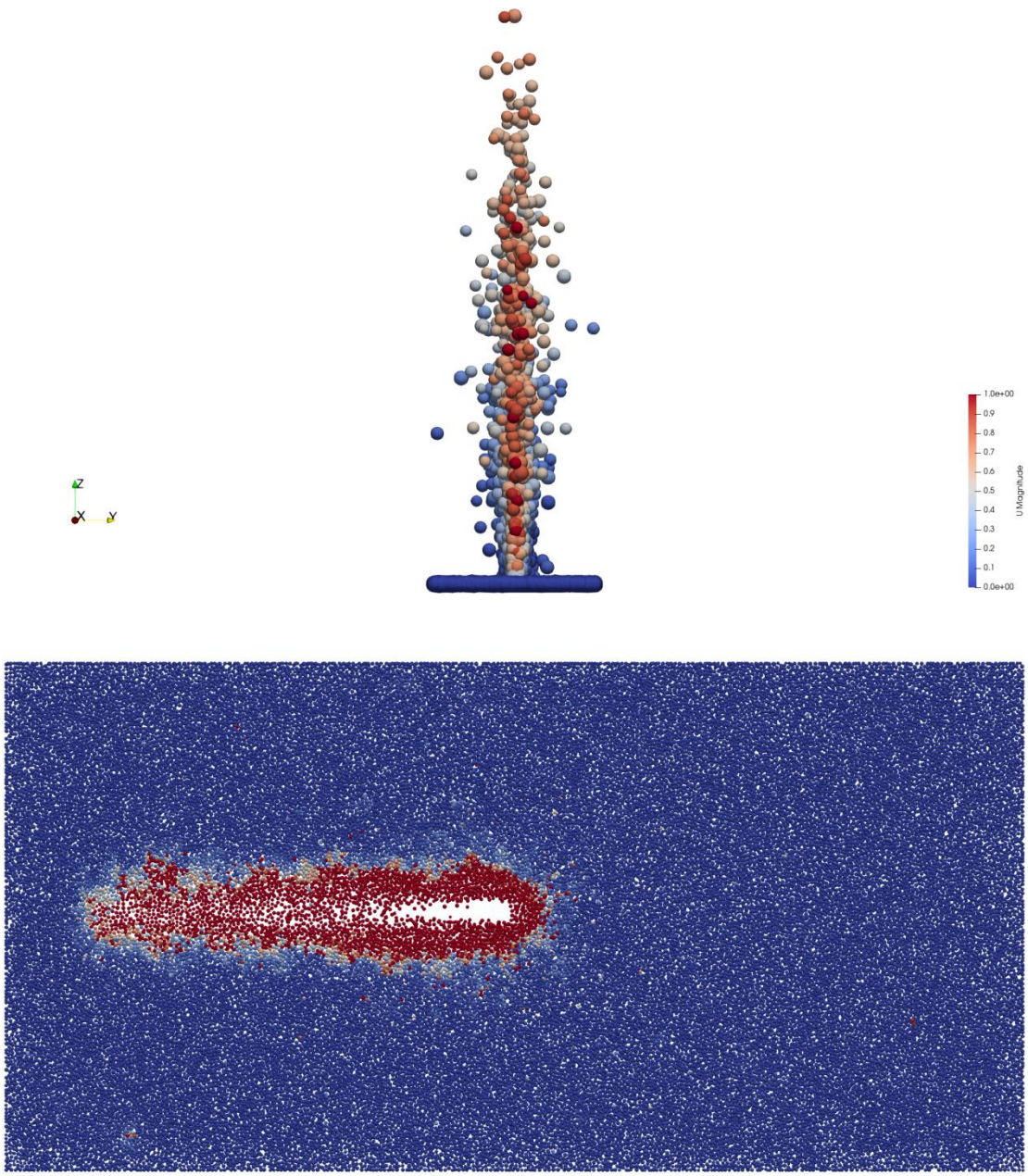
The folder "spatterBehaviorPredictSLM_CaoLiu" is the example for calculating SLM spatter. Enter the folder "fspatterBehaviorPredictSLM_CaoLiu", run ". /Allrun" to start the multi-core calculation (if it doesn't work, please run "chmod +x Allrun" first, then run ". /Allrun"). Here is the use of 48-core calculation, if there is no 48-core, you need to modify the file "spatterBehaviorPredictSLM_CaoLiu\system\decomposeParDict" and "Allrun" file.

```
FoamFile
{
    format      ascii;
    class       dictionary;
    location    "system";
    object      decomposeParDict;
}
// * * * * * * * * * * * * * * * * *

numberOfSubdomains 48;

method   scotch;
```

```
runApplication blockMesh
runApplication decomposePar
runApplication mpirun --oversubscribe -np 48 denseParticleFoam -parallel
runApplication reconstructPar
runApplication foamToVTK
runApplication particleTracks
```

The results of the calculation are as follows:




Z
X
Y
1.0e+00
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0e+00
U Magnitude