1. **More explanations were added.**

The influence of the number of grids on the results can be judged by calculating the models with different grid numbers. In addition, the appropriate grid number is selected under the comprehensive consideration of accuracy and calculation efficiency. As the number of grids continues to increase from 1.1 million, the parameters such as fluid temperature, flow rate and particle concentration in the loop by the calculation remain basically unchanged, which is totally different compared with 0.66 million.

2. **There is no entrance section in the simulation section. The specific explanation is as follows:**

In the experiment, shear force exists due to the presence of the inlet part, and particles are continuously carried to the inside of the pipeline under the action of the shear force. It was not until the axial distance was about 40% that the effect of shear force on the particle concentration completely disappeared. In the simulation, because of its closed loop, there is no shear force caused by the inlet. Therefore, the part of the experiment where shear force does not exist should be compared with the simulation.

3. **The results of verification analysis was added.**

Compared with the experimental results, the simulation results show the same trend without considering the entrance factor, which shows that the simulation results are reasonable.