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EFFECT OF STICKING PROBABILITIES ON NUMERICAL SIMULATION OF PARTICLE AGGREGATION IN TWO-DIMENSIONAL SPACE

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Abstract

The main phenomenon of coagulation is that particles aggregate to form floc. The formation of floc and cluster was simulated with computer in two-dimensional space using particle-cluster aggregation model and the properties of floc were analyzed using fractal theory. The effect of sticking probabilities on floc structure, density and porosity were analyzed. With the sticking probability increases, the simulated floc structure is gradually loose, floc density is gradually lower, the porosity is greater and the fractal dimensions are decrease, which are not conducive to precipitation. Through this study the factors that can not be accurately studied in the previous experiments could be controlled, which provided an effective new way for the research of particle aggregation.

Key words: coagulation, floc, fractal dimensions, numerical simulation, two-dimensional space

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