## TRANSPORT PHENOMENA & FLUID MECHANICS

平面冲击射流场中纳米颗粒凝结和扩散的矩积分方法

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摘要 A computational model combining large eddy simulation with quadrature moment method was employed to study nanoparticle evolution in a confined impinging jet. The investigated particle size is limited in the transient regime, and the particle collision kernel was obtained by using the theory of flux matching. The simulation was validated by comparing it with the experimental results. The numerical results show coherent structure acts to dominate particle number intensity, size and polydispersity distributions, and it also induce particle-laden jet to be diluted by the ambient. The evolution of particle dynamics in the impinging jet flow are strongly related to the Reynolds number and nozzle-to-plate distance, and their relationships were analyzed.

关键词 <u>nanoparticle</u> <u>coagulation</u> <u>impinging jet</u> <u>large eddy simulation</u> <u>guadrature momen</u> <u>method</u> 分类号

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## Quadrature method of moments for nanoparticle coagulation and diffusion in the planar impinging jet flow

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Key words <u>nanoparticle</u>; coagulation; impinging jet; large eddy simulation; quadrature moment method

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