

论文

分级进风燃烧室内含颗粒的湍流反应流的实验研究

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摘要 应用三维激光粒子动态分析仪(PDA),对分级进风燃烧室内含颗粒的湍流反应流的气固两相瞬时速度场进行了实验测量,同时对单相湍流反应流的瞬时速度场也进行了实验测量.得到了两种情况下燃烧室内气固两相和单相气体的平均轴向与切向速度、轴向与切向脉动速度均方根值和轴向-切向脉动速度二阶关联量的分布.

关键词 [湍流反应流](#) [气固流动](#) [分级进风](#) [燃烧室](#) [实验测量](#)

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Experimental study on particle-laden turbulent reacting flow in a combustor with staged air injection

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Abstract

The Three-Dimension Laser Particle Dynamic Analyzer (PDA) was used in the present experimental study. The instantaneous gas and particle velocities were measured for the particle-laden turbulent reacting flow in a combustor with staged air injection. The instantaneous gas velocity was also measured. The distributions of time-averaged axial and tangential velocities, root mean squares of axial and tangential fluctuating velocities, and second-order correlation moments of axial and tangential fluctuating velocities were obtained both for the gas and particle phases and for the single gas phase.

Key words [turbulent reacting flow](#) [gas-particle flow](#) [staged air injection](#) [combustor](#) [experimental measurement](#)

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