

传递现象

小通道单相流体突扩和突缩局部阻力特性

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收稿日期 2006-2-21 修回日期 2007-2-8 网络版发布日期 2007-5-29 接受日期

摘要 采用缝隙测压这种在通道上直接测量压力的方法, 测量了内径从0.330 mm变化到0.580 mm的小通道内突然扩大和突然缩小的局部阻力特性。结果表明, 缝隙测压方式是一种可行的压力测量方法; 与常规通道的实验结果相比, 在层流阶段, 小通道内液体流动具有较小的突扩局部阻力系数以及较大的突缩局部阻力系数; 而在湍流阶段, 小通道内液体流动的突扩和突缩局部阻力系数与常规通道的实验结果相同。

关键词 [小通道](#) [突扩](#) [突缩](#) [阻力系数](#) [缝隙测压](#)

分类号

Local resistances of single-phase flow across abrupt expansion and contraction in small channels

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Abstract

Local resistances caused by abrupt expansion and contraction were experimentally investigated for the small channels with diameters from 0.330 mm to 0.580 mm by using a novel pressure measurement method of the tiny gaps on the channels. The experimental results showed that the pressure measurement method through the gaps was a feasible method for small channels. For laminar flow, the expansion loss coefficient was much lower and the contraction loss coefficient was much higher as compared with the experimental results of conventional channels, while for turbulent flow, the expansion and contraction loss coefficients were consistent with those of the conventional channels.

Key words [small channel](#) [sudden expansion](#) [sudden contraction](#) [loss coefficients](#) [pressure measurement](#)

DOI:

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