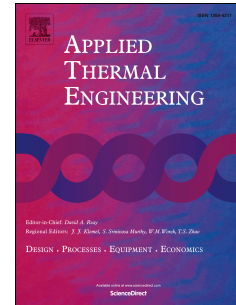


Accepted Manuscript

Mean Pressure Distributions around a Circular Cylinder in the Branch of a T-junction with/without Vanes

Bo Wu, Yantao Yin, Mei Lin, Liangbi Wang, Min Zeng, Qiuwang Wang



PII: S1359-4311(14)01154-5

DOI: [10.1016/j.applthermaleng.2014.12.025](https://doi.org/10.1016/j.applthermaleng.2014.12.025)

Reference: ATE 6219

To appear in: *Applied Thermal Engineering*

Received Date: 11 July 2014

Revised Date: 1 December 2014

Accepted Date: 12 December 2014

Please cite this article as: B. Wu, Y. Yin, M. Lin, L. Wang, M. Zeng, Q. Wang, Mean Pressure Distributions around a Circular Cylinder in the Branch of a T-junction with/without Vanes, *Applied Thermal Engineering* (2015), doi: 10.1016/j.applthermaleng.2014.12.025.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Marked Manuscript for *Applied Thermal Engineering* (ATE-2014-6726)

Presented at the International heat transfer symposium 2014 (IHTS2014), 6-9 May 2014, Beijing, China (Original paper title: “Mean Pressure Distributions around Circular Cylinder under Flow in the Branch of a T Pipe Junction” and Paper No.: # IHTS140425)

**Mean Pressure Distributions around a Circular Cylinder in the
Branch of a T-junction with/without Vanes**

Bo Wu¹, Yantao Yin¹, Mei Lin¹, Liangbi Wang², Min Zeng¹, Qiuwang Wang^{1,*}

1 Key Laboratory of Thermal-fluid Science and Engineering, Ministry of Education,
Xi'an Jiaotong University, Xi'an, Shaanxi, 710049, P. R. China

2 Department of Mechanical Engineering, Lanzhou Jiaotong University, Lanzhou
730070, Gansu, PR China

*Corresponding author: Tel & Fax: +86-29-82665539

E-mail address: wangqw@mail.xjtu.edu.cn (Q.W. Wang)

Abstract

The mean pressure distributions of a single circular cylinder in the branch of a T-junction with and without vanes are experimentally investigated in a low-speed wind tunnel. Experimental data of the circular cylinder in a straight duct are conducted to provide a benchmark. Mean pressure distributions of the circular cylinder are obtained at different positions along streamwise direction under the velocity ratio (R) ranging from 0.13 to 0.36. The detailed flow structure is observed with the help of numerical simulation validated by available experimental data. Two dimensionless parameters including correlation degree and amplitude ratio, are defined to analyze the pressure characteristics around the circular cylinder. It is found that, both the correlation degrees and the amplitude ratios increase totally with

Download English Version:

<https://daneshyari.com/en/article/645291>

Download Persian Version:

<https://daneshyari.com/article/645291>

[Daneshyari.com](https://daneshyari.com)