Call-for-abstract : *The 3rd Korea- Japan Joint Workshop on Fans and Compressors*

The 3rd Korea-Japan Joint Workshop on Fans and Compressors is an international workshop dealing with the topics on aerodynamics and aero-acoustics of fans, blowers and compressors. The purpose of the workshop is to promote joint research activities and collaboration between Korea and Japan, which are supported by Korean Society of Fluid Machinery (KSFM) and Turbomachinery Society of Japan (TSJ). The 1st workshop was held in 2012 at Waseda University, Tokyo, Japan, and the second workshop was held in 2013 at the Suites Hotel in Jeju island, Korea.

The 3rd workshop will be held on October 29, 2014 in Nagasaki University, Japan. The main aim of the 3rd workshop is focused to exchange in and discuss with the recent research results in the fields of fans, blowers and compressors in both countries. In addition, the 3rd workshop would be a good opportunity for the attendees from Japan and Korea to promote their closer relationship and to exchange the culture.

The organizer, on the behalf of TSJ, would like to cordially invite all the researchers on fans, blowers and compressors in Korea and Japan. All the research topics submitted for the 3rd workshop are deeply appreciated and will be included in workshop abstract book.

General Information

Title: the 3rd Korea-Japan Joint Workshop on Fans and Compressors

Date: October 29, 2014

Venue: Sky Hall, Nagasaki University

      1-14 Bunkyo-machi Nagasaki Japan

Organization: Turbomachinery Society of Japan (TSJ)

Co-organization: Korean Society of Fluid Machinery (KSFM)

Language: Official language of the workshop is English

Presentation: 30 minutes including question and discussion

Important date

Registration	:	August 31, 2014
Extended abstract	:	September 30, 2014
Workshop	:	October 29, 2014 (start from 13:30)
Post-workshop tour	:	October 30, 2014 (start from morning, finish before lunch time)
		Visit to the Museum of Mitsubishi Heavy Industry, Nagasaki

Scope of the Workshop

All the topics on fans, blowers and compressors (Axial, Centrifugal and other type fans and compressors, turbochargers, propeller fans for ventilation systems)

Submission of the Extended Abstract

Extended abstract should be prepared less than 1 page including related figures and tables by using Microsoft or PDF form (refer to the sample form attached herein), and submitted by e-mail to the organizer (daisaku@nagasaki-u.ac.jp) before September 30, 2014.

Registration

All the participants of the 3rd workshop should register by sending e-mail to the organizer(daisaku@nagasaki-u.ac.jp) before August 31, 2014, and please pay the registration fee of 5,000 Japanese Yen (approximately 50,000 Korean Won) at the registration desk in cash.

Organizing Committee Members (Japanese side)

Prof. Yutaka Ohta (Waseda University)

Prof. Kazuyoshi Miyagawa (Waseda University)

Dr. Hideaki Tamaki (IHI Co.)

Dr. Takuhiro Nishioka (Hitachi Ltd.)

Prof. Souich Sasaki (Nagasaki University)

Prof. Daisaku Sakaguchi (Nagasaki University : daisaku@nagasaki-u.ac.jp)

EXAMPLE

Computerized Performance and noise prediction method of centrifugal fan

Chan Lee[1] and Jun Gon Kim[2]

ABSTACT

An analysis method is developed for predicting both the performance and the noise of centrifugal fan or blower. The performance prediction is based on the mean-line approach coupled with flow blockage, flow slip and pressure loss models. The pressure loss correlation models are categorized into the various loss sources such as impulse, friction, diffusion and mixing of air passing through fan.

Based on the predicted performance prediction results, fan noise prediction is made by using the analysis models for discrete frequency and broadband noise models. The discrete frequency noise is modeled by the Gutin's acoustic theory for rotating lift and blade interaction. The broadband noise is modeled by the correlations for impeller blade turbulent boundary layer and incoming turbulence, which are expressed in terms of fan performance parameters. The present combined performance and noise prediction method are applied to eight different centrifugal fans to verify its prediction accuracy.

As shown in Fig. 1, the prediction results are well-agreed with the test results on flow capacity, pressure, efficiency and power within a few percent relative errors. The predicted noise spectrum of Fig. 2 shows also good agreement with the measurement over entire frequency range.
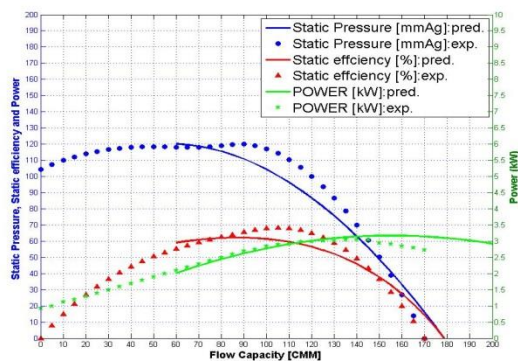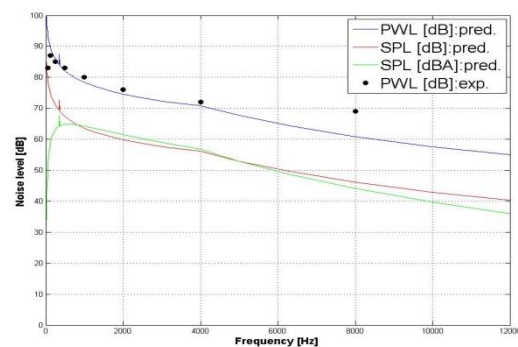

Fig. 1 Performance comparisons of turbo blower   Fig. 2 Noise spectrum of turbo blower

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