Title:
The use of inverter-driven jet-fans to reduce tunnel ventilation costs
Symposium:
BHR13th ISAVVT, 2009

Ichiro Nakahori, Takahide Ato, Kenichi Murakami, Daisuke Araki
Sohatsu Systems Laboratory Inc., Japan
Tsunetake Kanatani
Hyogo Prefecture Institute of Technology
Alan Vardy
Civil Engineering Division, University of Dundee, Scotland

ABSTRACT

Modern, general purpose inverters have developed to a stage where they can be used reliably and with very little maintenance in environments such as road tunnels. It is shown in this paper that their use to enable jet-fans to be operated at reduced speed could yield large cost savings and other benefits for tunnel operators and users. The potential cost savings arise primarily from greatly reduced power demand and are therefore beneficial from a global warming perspective as well as for tunnel operators. Greatest cost savings are shown to be achieved when all jet-fans in a tunnel are operated at reduced speed instead of operating a smaller number at high speed. The methodology is validated through full-scale field tests.


HBI Haerter Consulting Engineers
BHR Group
This is to certify that
Dr Ichiro Nakahori
was awarded the HBI Haerter AG Best Paper Award for their paper titled
The use of inverter driven jet-fans to reduce tunnel ventilation costs
at the
13th International Symposium on Aerodynamics and Ventilation of Vehicle Tunnels
New Brunswick, New Jersey, USA: 13 - 15 May 2009

This paper was awarded for a prize of Best Paper at the 13th International Symposium on Aerodynamics and Ventilation of Vehicle Tunnels was held in New Jersey, United States, 13th to 15th May.

Sohatsu Systems Laboratory Inc.
Tel: +81(0)78-325/3220 Fax:+81(0)78-325-3221
www.sohatsu.com
San-nomiya Denden Bldg.
64, Naniwa-machi, Cyuo-ku, Kobe, Hyogo
Japan 650-0035