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This paper treats the investigation of the complex internal flow in Sirocco type fans by means of both numerical and experimental methods. In order to improve the design and efficiency of these fans, Computational Fluid Dynamics (CFD) with high-quality, high-resolution structured and unstructured grids are used. Simulations are verified by both integral measurements at a high-precision chamber test rig according to ISO 5801 and by means of Stereoscopic Particle Image Velocimetry (Stereoscopic PIV). Comparison between numerical and experimental data shows a high consistency. Performance curves and efficiencies can be predicted with less than five per cent deviation in a wide operating range.

Author Name:

Stefan FRANK
Manoochehr DARVISH
Bastian TIETJEN
Adam STUCHLIK

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Conference Location:

Senlis (France)

Conference Proceeding PDF:

 [049_Frank.pdf](#)[5]

Pages:

12

Conference Date:

Wednesday, April 18, 2012

Conference Name:

FAN 2012

Image:

