



CFD Simulation of the Two Phase Pulsating Flow in the Reciprocating Compressor Installation

by:

Piotr Cyklis and Kantor Ryszard

Institute of Industrial Apparatus and Power Engineering

Cracow University of Technology

Cracow

Poland

E-mail: pcyklis@mech.pk.edu.pl, rkantor@mech.pk.edu.pl

**4th Conference of the EFRC
June 9th / 10th, 2005, Antwerp**

Abstract:

The analysis of the pulsating flow in the reciprocating compressor installation is important for the technical exploitation compressor plants. One of the phenomena causing difficulties in modeling gas pulsations is the presence of liquid droplets in gas. For an example the oil remover designed for refrigerating reciprocating compressor is chosen for investigation. As the numerical tool the FLUENT software has been used and for verification the experimental identification method has been used. For multiphase flow several models have been compared. As the effect of this work we may conclude that the use of two-phase flow simulation has more influence in case of liquid mass fraction 10%-15% and more. With lower liquid contamination than 5% mass fraction the improvement of two- phase flow consideration in simulation of pulsations is not that important.