



COLLOQUIUM

Group: Engineering Fluid Dynamics

As part of his MSc thesis assignment

H. Rijkers

will give a presentation, entitled:

Experimental Study and Modeling of Cavitating Flow in a Venturi

Date: Friday November 30, 2012

Time: 14:00

Room: ZH 286

Summary:

Cavitation can be an unwanted phenomenon, for example in a pump or on ship propellers cavitation can often lead to unwanted noise or erosion damage. Cavitation can also be utilized to advantage, for example to enhance mass transfer in mixing, to clean surfaces and for medical purposes.

The physical processes involved in cavitation and its time dependence make cavitation hard to predict. The noise and the intensity of the pressure pulses generated as a result of cavitation are even harder to predict.

In the present study an experimental set-up has been designed to investigate the flow phenomena that occur for a cavitating flow of tap water in a venturi. Measurements have been performed for different inlet pressures. The flow is recorded with the use of a high speed camera.

The flow in the venturi is numerically simulated for similar conditions as in the experiment. The results of the numerical simulation are compared the the results of the experiments and to available data from the literature. Emphasis is on the shape of the vapor bubbles and the pressure difference required between the inlet and outlet of the venturi for cavitation to occur.

Assessment committee:

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d.d. _____