



COLLOQUIUM

Conform artikel 4.6.8 van het SSNS-wb.

Vakgroep: Technische Stromingsleer

In het kader van zijn doctoraalopdracht zal

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een voordracht houden getiteld:

**Reconstruction of Multi-Component Droplet Size Distribution
in Three-Dimensional Condensing Flow**

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Summary:

The Phase Path Analysis (PPA) method, which was originally formulated and implemented for quasi one-dimensional flow of a single-component condensing vapor, is extended towards multi-component condensing flow in three dimensions. The motivation for this development is the industrial need for accurate prediction tools that can be used to design supersonic gas conditioners, e.g. devices capable of separating heavy hydrocarbons from natural gas by selective condensation.

The PPA method is able to predict the size distribution function corresponding to the droplet population. The present study concentrates on two steps: (i) the extension of PPA from one-dimension to three dimensions and (ii) the extension of PPA from single-component to multi-component condensation.

Several verification and validation steps are presented and discussed, including the application of the developed algorithm to a gas conditioner designed by Twister B.V.

This research was partially conducted at the University of Twente and partially at Twister B.V. in Rijswijk.

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