**Model based real-time diagnostics of binary distillation columns**

The purpose is to find out  to what extent simple, empirical models, can be used to detect different types of malfunctions and suboptimal operation of standard distillation columns. Note that it may not be included to actually derive such models.

Examples of conditions that could be detected are

         steam trap leakage

         fouling of packing

         over-purification

         under-purification

         poor control

         etc (fill in your own suggestions)

An important part of the project is a literature study to find out what has been done and published before. Examples of keywords are: distillation, fault detection, fault isolation, root cause analysis, model based, black box model, grey box model, empirical model, hypothesis testing, real-time, on-line

Use standard notation (L,V,P,B,D,F) and assume that those quantities are measured, as well as sensitive temperature, levels and ambient temperature.  The following variables may or may not be available on-line: compositions of feed, distillate etc, delta pressure, temperature profile.

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Regards,

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