



## Advanced Operator Support – MFM Model Validation

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## Advanced Operator Support – MFM Model Validation

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Multilevel Flow Modelling is a functional modelling methodology. MFM provides an ontology for modelling the functions and objectives of process systems. The models, in combination with a rule base, can be used as a knowledge-based approach for carrying out inferences. MFM has the capability of performing both abductive (from effects to causes) and deductive inferences (from causes to effects) and has been used for various purposes such as on-line diagnosis, alarm analysis, risk analysis, process analysis, counter-action planning, etc.

When using MFM for these applications, plant measurements are interpreted and fed to the developed MFM model. This means that the MFM models are built mostly based on qualitative information (process knowledge, topologic information, operational knowledge from operating manuals and control room operators), but are used for inferences on qualitative input data transformed from quantitative data. However, no specifications, validations or evaluations are performed of the quantitative input to provide reliable models. This poster demonstrates the result from the presenting author's PhD work which evaluates previous testing, validation and evaluation of MFM models to propose a novel method for MFM model validation. The proposed method is for models intended for plant-wide on-line diagnosis.