

## FAULT DETECTION APPROACH BASED ON FUZZY QUALITATIVE REASONING APPLIED TO THE DAMADICS BENCHMARK PROBLEM

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A computer assisted fault detection methodology based on a fuzzy qualitative simulation algorithm is described. The adoption of fuzzy sets allows a more detailed description of physical variables, through an arbitrary, but finite, discretisation of the quantity space. The fuzzy representation of qualitative values is more general than ordinary interval representation, since it can represent not only the information stated by a well defined real interval but also the knowledge embedded in the soft boundaries of the interval. Such a methodology was applied to a pneumatic servomotor actuated control valve that is the benchmark problem of the EC RTN DAMADICS.