



ΕΘΝΙΚΟ ΜΕΤΣΟΒΙΟ ΠΟΛΥΤΕΧΝΕΙΟ
ΣΧΟΛΗ ΧΗΜΙΚΩΝ ΜΗΧΑΝΙΚΩΝ

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ΣΕΜΙΝΑΡΙΟ ΧΗΜΙΚΗΣ ΜΗΧΑΝΙΚΗΣ

Πέμπτη 17 Φεβρουαρίου 2011, 11:00

Αίθουσα Σεμιναρίων «Ν. Κουμούτσου»

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**Theory and Applications of ANALOGICAL GATES
in Control and Decision Support**

Analogical gates are developed to implement four-quadrant fuzzy-generalisation of Boolean logical gates. They provide an alternative to the traditional rule-based realisation of fuzzy inference. Therefore, analogical gates can be used in wide range of application especially for multi-criteria aggregation. In this presentation, the basic properties of the analogical gates are reviewed, their advantages compared to the traditional fuzzy formalism are discussed and some preliminary results on synthesis are elaborated. To demonstrate their benefits, analogical gates are applied in the risk assessment of twenty industrial plants for insurance purposes. The results are compared to those made by human experts and are found to match their assessments with a good accuracy.