

Interval methods applied to underwater robotics

Thursday 26th of September, 11-12h at the Main Conference Room
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Abstract: This seminar deals with applications of interval methods to solve problems such as localization and mapping in the context of underwater robotics. The classical approach is to use probabilistic approaches (Such as Kalman filtering or particle filtering). While probabilistic methods consider the probabilistic distribution of variables, the interval methods consider the set of possible values of a variable. The interval methods are deterministic in nature and has different advantages over probabilistic methods such as native handling of non linear equations or solving problems of high dimension, guaranteed result under the right assumptions.

Keywords: localization, Mine Counter Measure (MCM), shape detection, robust to outliers, relaxed Constraint Satisfaction Problem (CSP), irregular constraints

