

Robex

ROBotique d'EXploration

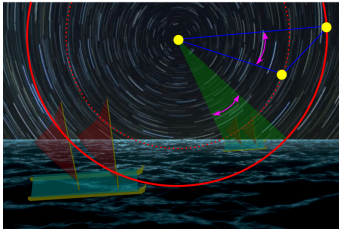
L. Jaulin

Brest, May 27, 2019

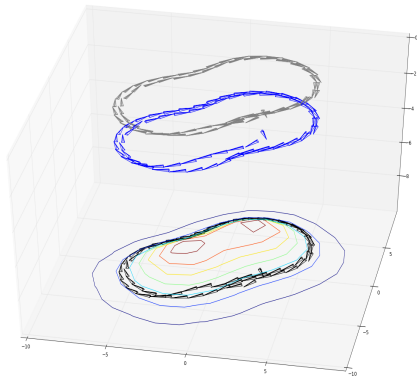


Members: Luc Jaulin, Fabrice Le Bars, Simon Rohou, Benoît Zerr,
Damien Massé,

Specificity: Unstructured environment, low-cost, half-blind navigation, groups, guaranty.

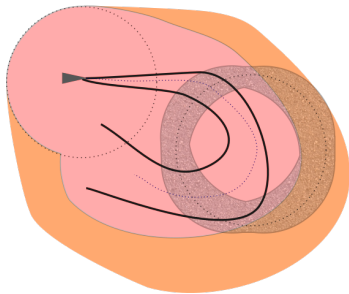


Paradigm: River-bridge, Explore-return.

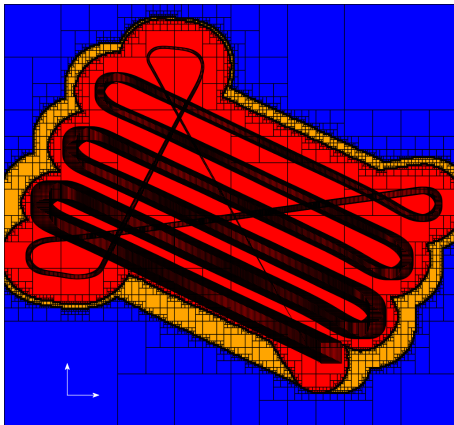


Formalism

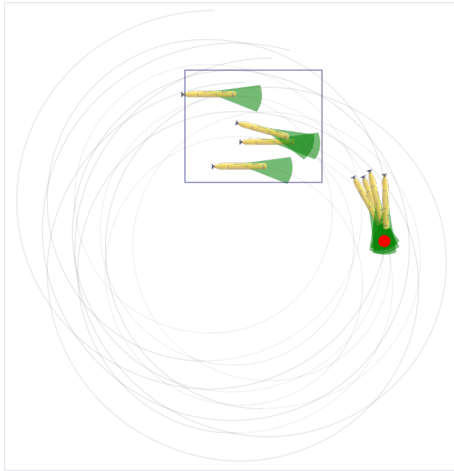
$$\left\{ \begin{array}{l} \dot{\mathbf{x}} = \mathbf{f}(\mathbf{x}, \mathbf{u}), \mathbf{u}(t) \in [\mathbf{u}](t) \\ \mathbf{y} = \mathbf{g}(\mathbf{x}(t_1), \mathbf{x}(t_2)) \\ \mathbb{Z} = \bigcup_{t \geq 0} \mathbb{V}(\mathbf{x}(t)) \\ \mathbf{x}(0) = \mathbf{x}_0 \end{array} \right.$$



Tools: Interval analysis, set computation, nonlinear control, thick sets.



Specific control



Experiments

<https://www.ensta-bretagne.fr/jaulin/submeeting2019.html>