

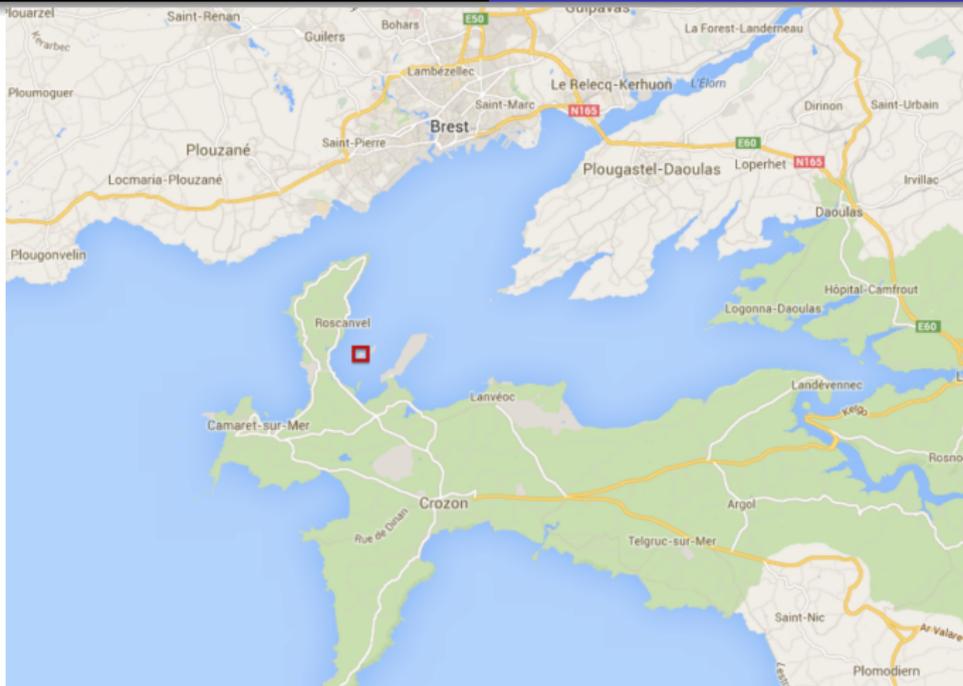
Sûreté de fonctionnement des systèmes robotiques

L. Jaulin, B. Zerr, F. Le Bars, T. Le Mézo, S. Rohou, B. Desrochers, K.
Vencatasamy
Lab-STICC, ENSTA-Bretagne
Brest, 17 janvier 2018, Journée d'échange avec la MRIS



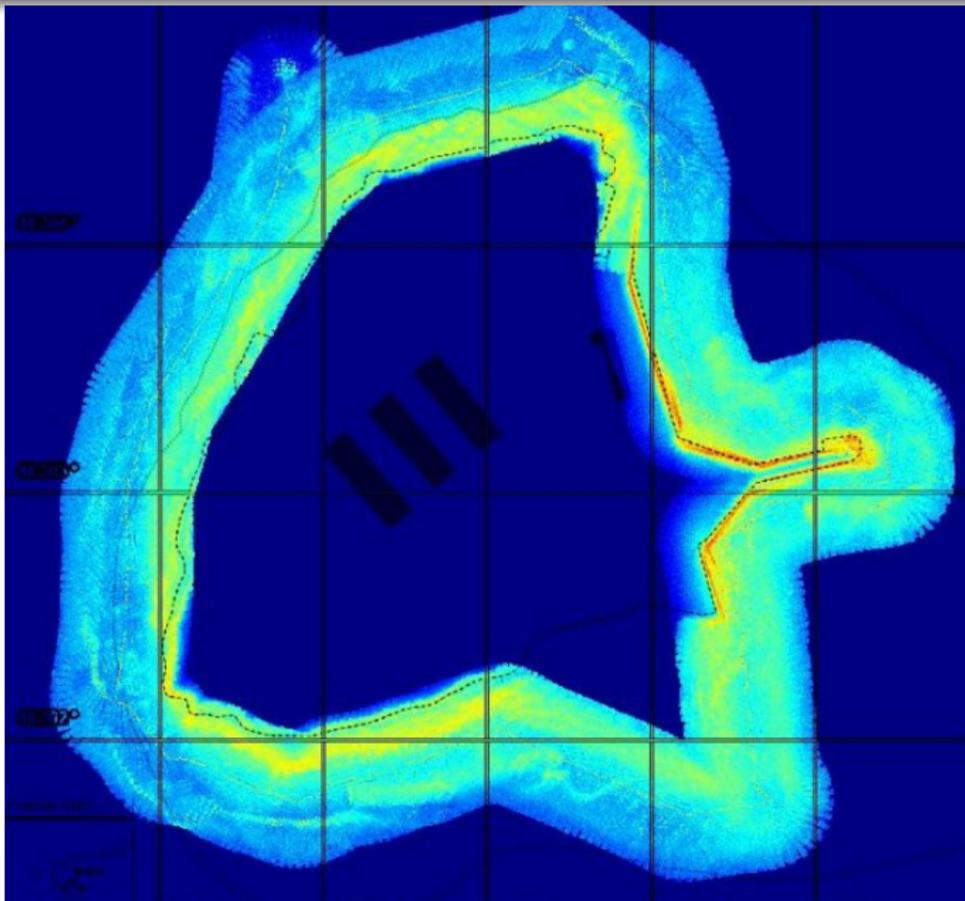
Follow an isobath

Ile des morts experiment

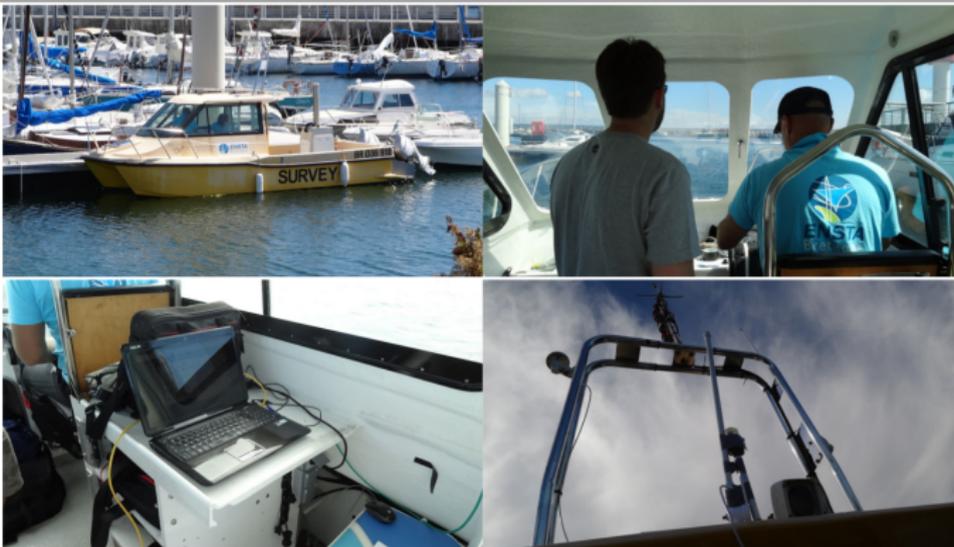






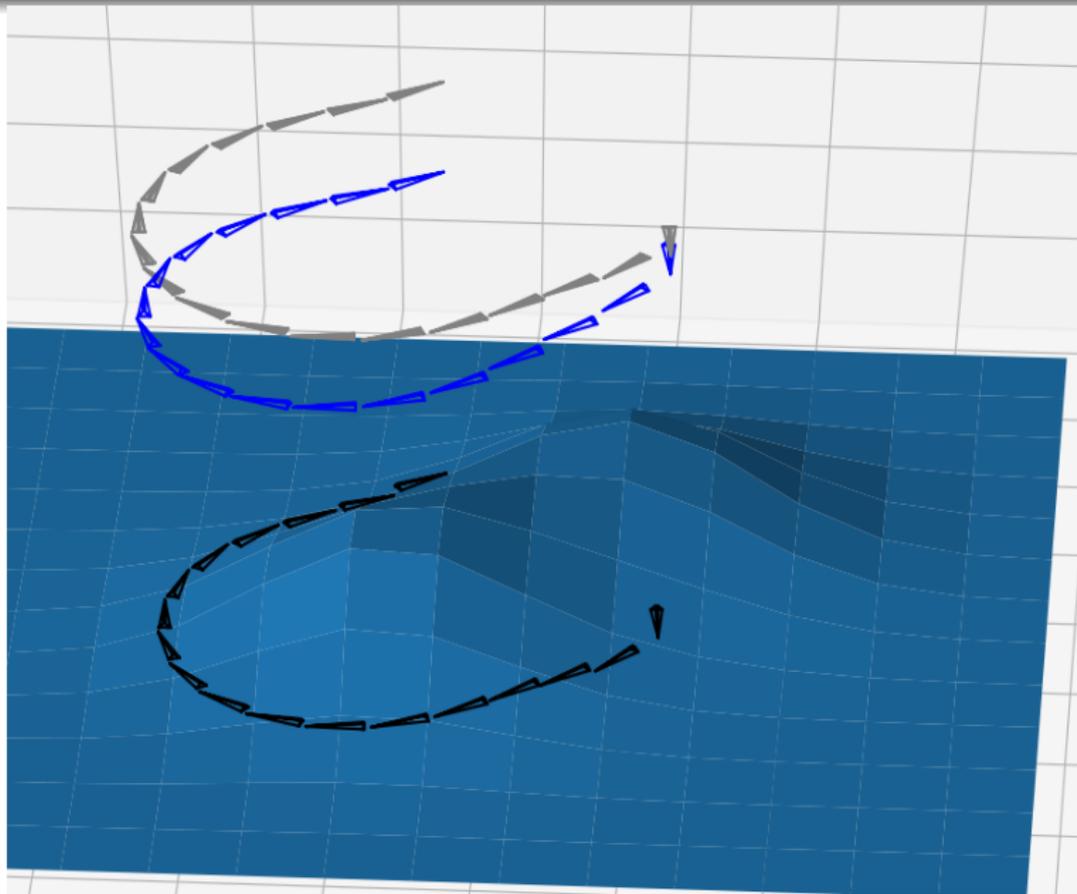


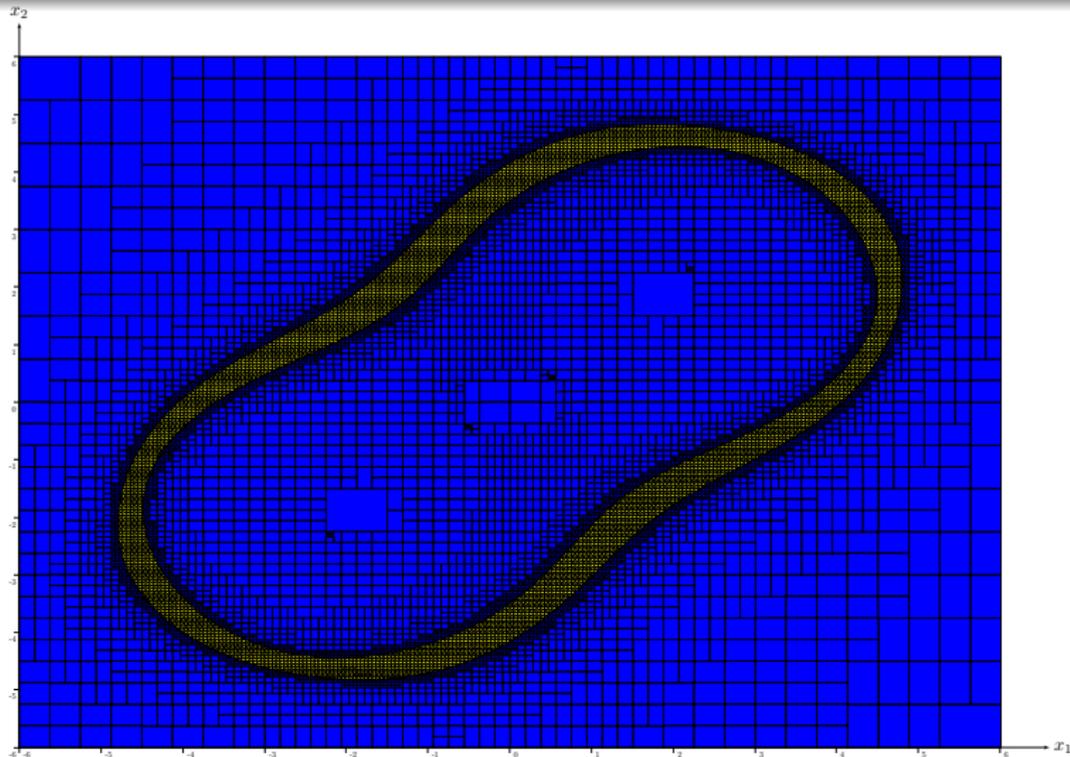




24 juillet 2013







With

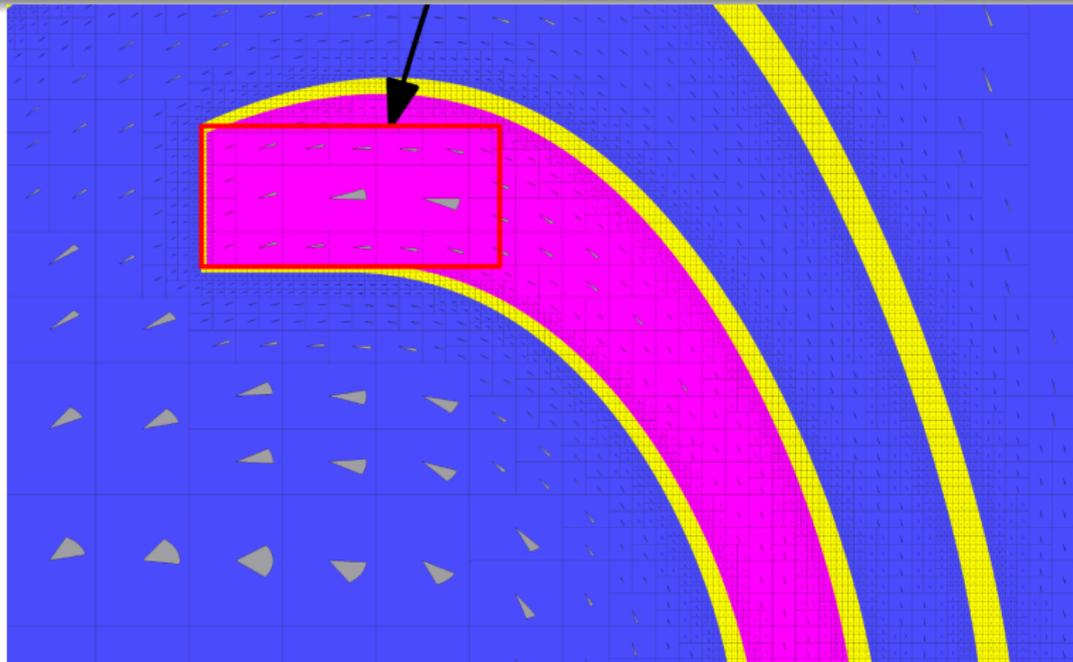
- **Ensta Paris** : A. Chapoutot, F. Pessaux, D. Filliat, J. Alexandre, O. Mullier
- **Ensta-bretagne** : L. Jaulin, F. Le Bars, B. Zerr, T. Le Mézo, S. Rohou, B. Desrochers, K. Vencatasamy.
- **Polytechnique** : E. Goubault, S. Putot, B. Martin, A. Panchea, U. Fahrenberg.

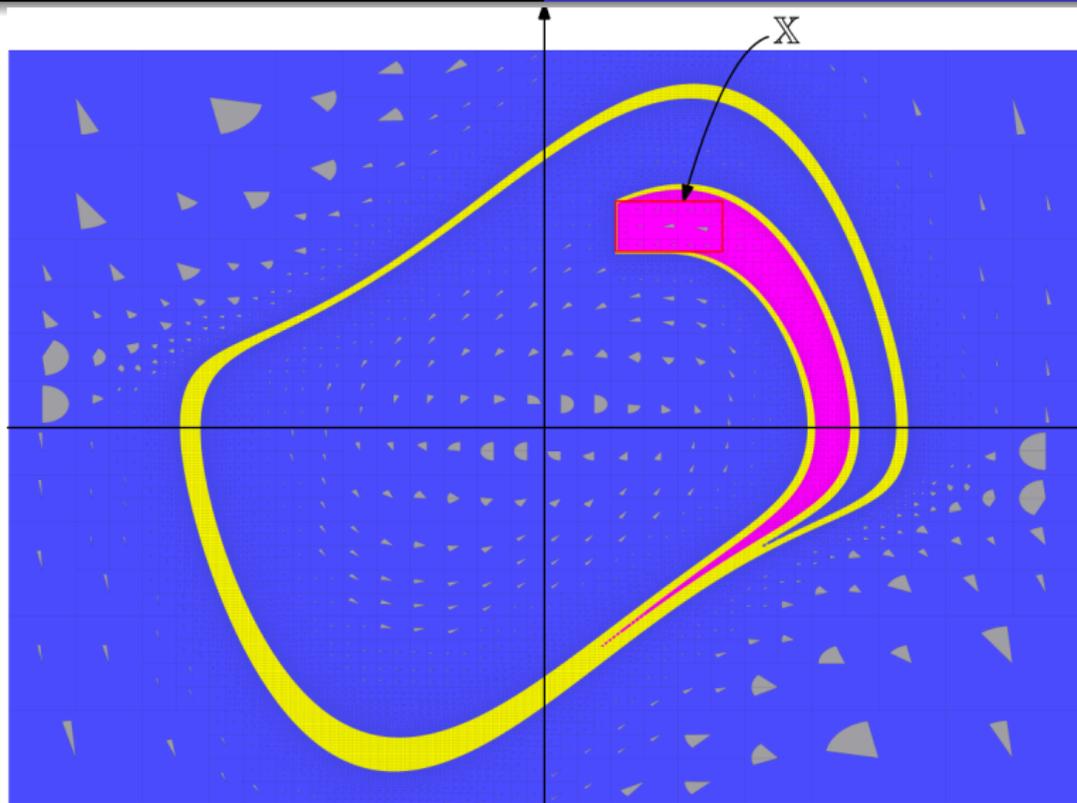
Invariant sets

We consider a state equation $\dot{\mathbf{x}} = \mathbf{f}(\mathbf{x})$.

The Van der Pol system

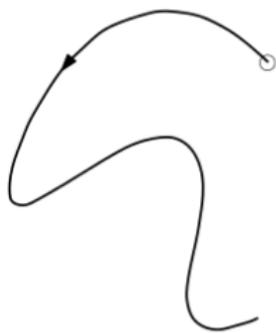
$$\begin{cases} \dot{x}_1 = x_2 \\ \dot{x}_2 = (1 - x_1^2) \cdot x_2 - x_1 \end{cases}$$



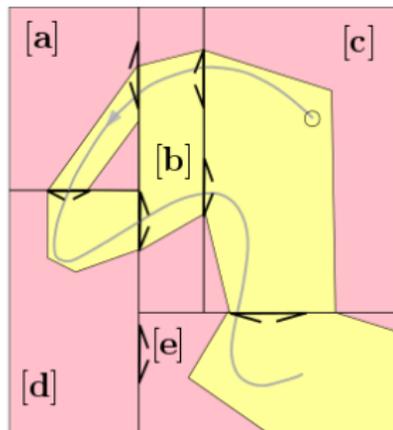


Mazes

A maze [7][6] is a set of trajectories.

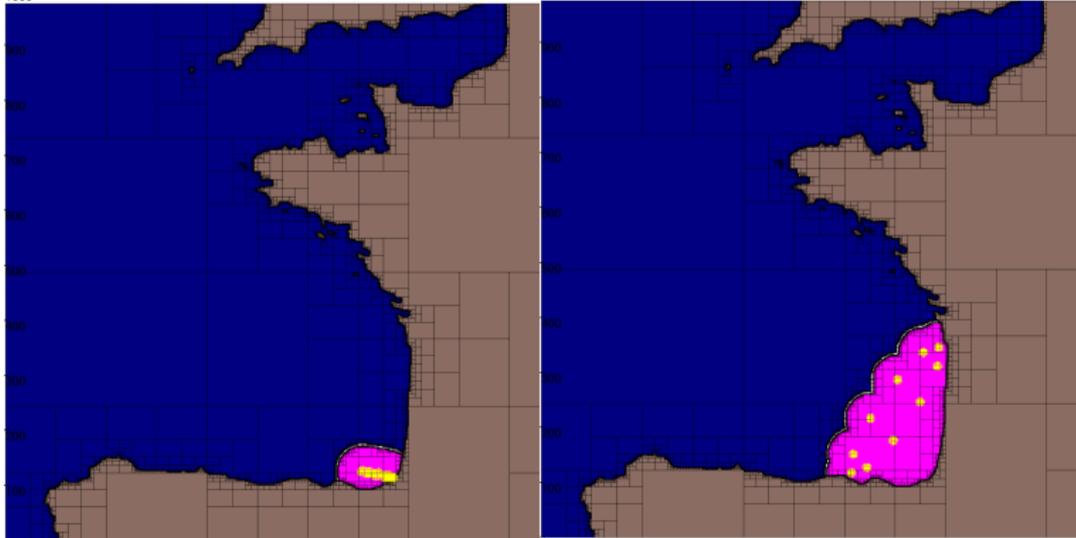


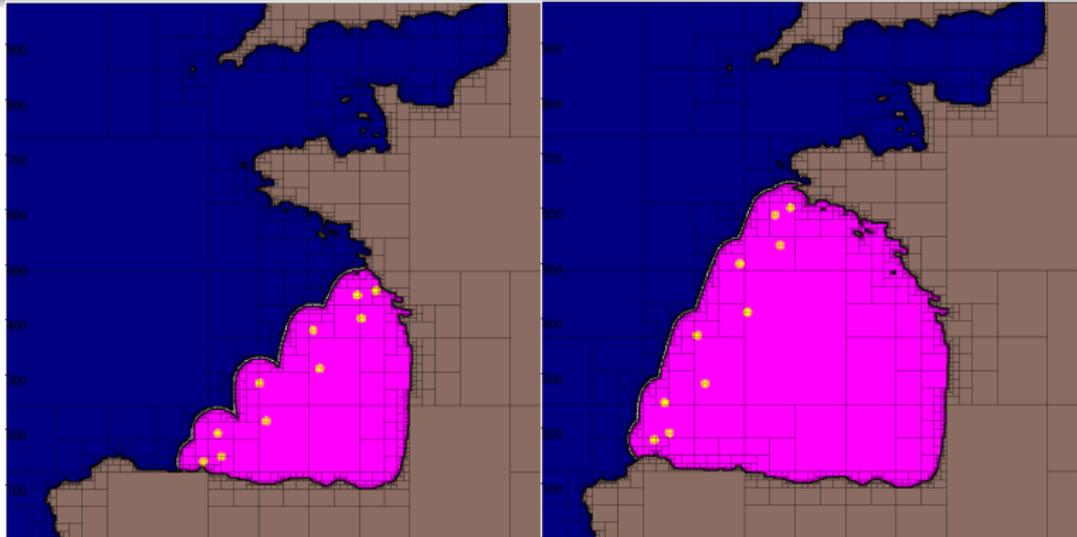
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Secure a zone with robots

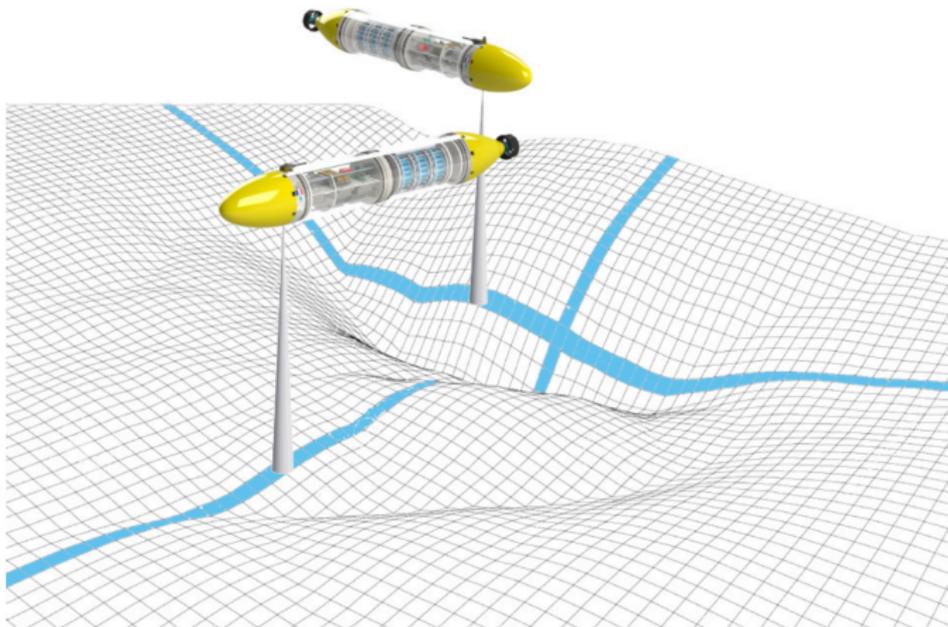
[9][4]





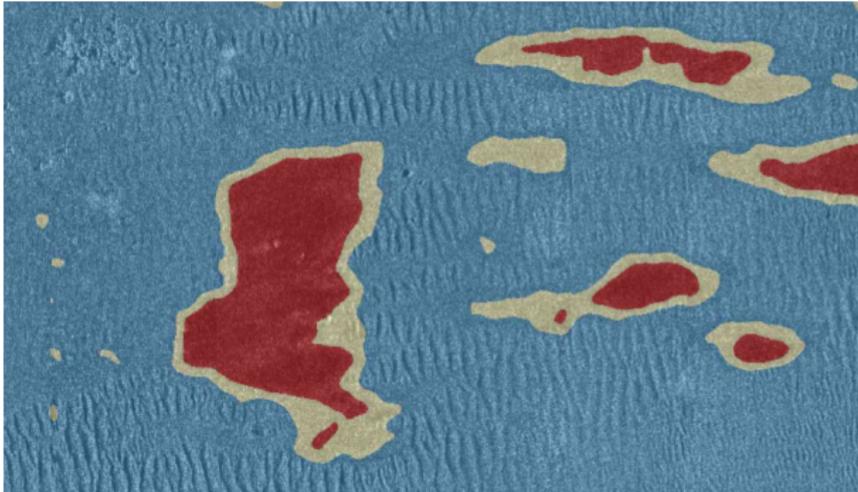
Bathymetric SLAM

[8]



Shape-based SLAM

[5, 1, 2, 3]





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