

Counting for exploration

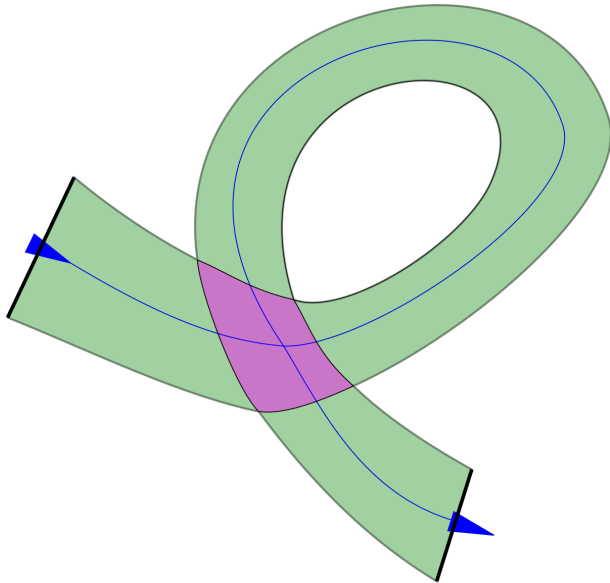
Brest (virtual)
2021, april 15

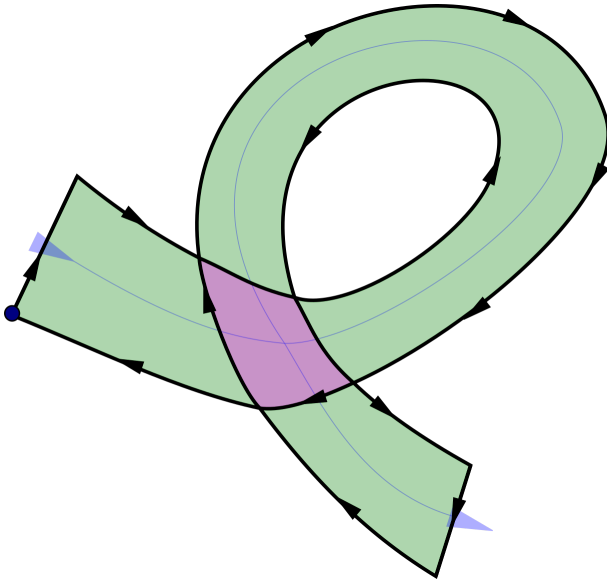


Number of views (proprioceptive)

B. Desrochers and L. Jaulin (2016) [1]
Guaranteed assessment of the area covered by an AUV
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Idea: winding number method





Matching (exteroceptive)

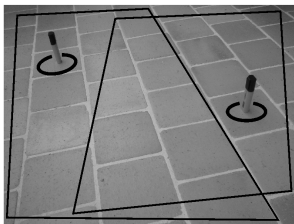
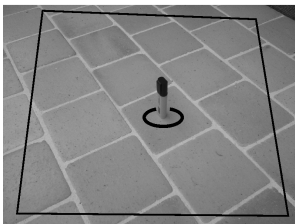
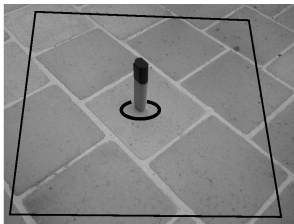
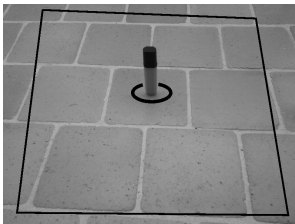
M. Laranjeira, L. Jaulin and S. Tauvry (2016) [3].
Underwater Mosaics Using Navigation Data and Feature
Extraction. Reliable Computing,
[Slides](#)

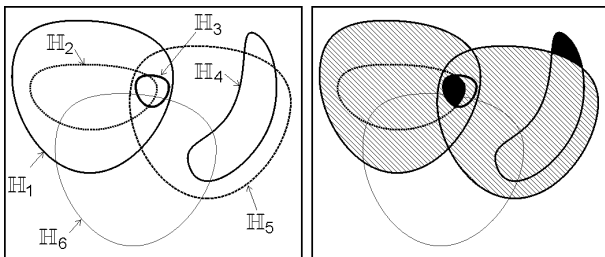
L. Jaulin (2016)[2]

"Range-only SLAM with indistinguishable landmarks; a constraint programming approach", Constraints.

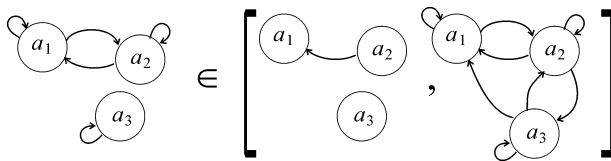
[Article](#)







- (i) $\mathbb{H}_i \subset \mathbb{H}_j \Rightarrow \mathbf{a}(i) = \mathbf{a}(j)$
- (ii) $\mathbb{H}_i \cap \mathbb{H}_j = \emptyset \Rightarrow \mathbf{a}(i) \neq \mathbf{a}(j)$
- (iii) $\mathbb{H}_i \subset \mathbb{H}_j \Rightarrow \mathbb{H}_j \setminus \mathbb{H}_i \subset \mathbb{F}$.



$$\begin{pmatrix} 1 & 1 & 0 \\ 1 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \in \begin{pmatrix} [0,1] & [0,1] & 0 \\ 1 & [0,1] & [0,1] \\ [0,1] & [0,1] & [0,1] \end{pmatrix}$$



B. Desrochers and L. Jaulin.

Guaranteed assessment of the area covered by an auv.
MOQESM'2016, 2016.



L. Jaulin.

Range-only slam with indistinguishable landmarks; a constraint programming approach.
Constraints, 21(4):557–576, 2016.



M. Laranjeira, L. Jaulin, and S. Tauvry.

Underwater mosaics using navigation data and feature extraction.
Reliable Computing, 22:116–137, 2016.