

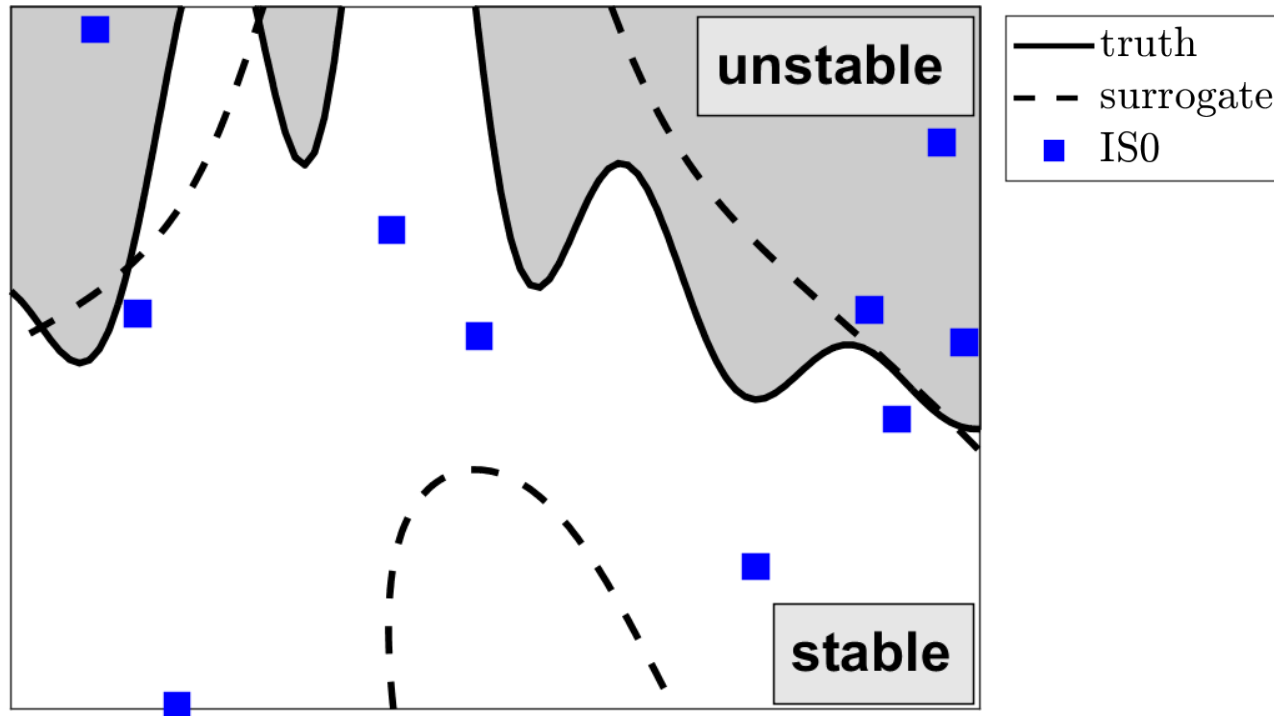
Contour location via entropy reduction leveraging multiple information sources (Poster AB#99)

- Dr. Alexandre Marques (MIT)
- Dr. Remi Lam* (MIT)
- Prof. Karen Willcox (ICES, UT Austin)

Supported by Air Force CoE on Multi-Fidelity Modeling of Rocket Combustor Dynamics, Award FA9550-17-1-0195, and AFOSR MURI on Managing Multiple Information Sources of Multi-Physics Systems, Awards FA9550-15-1-0038 and FA9550-18-1-0023

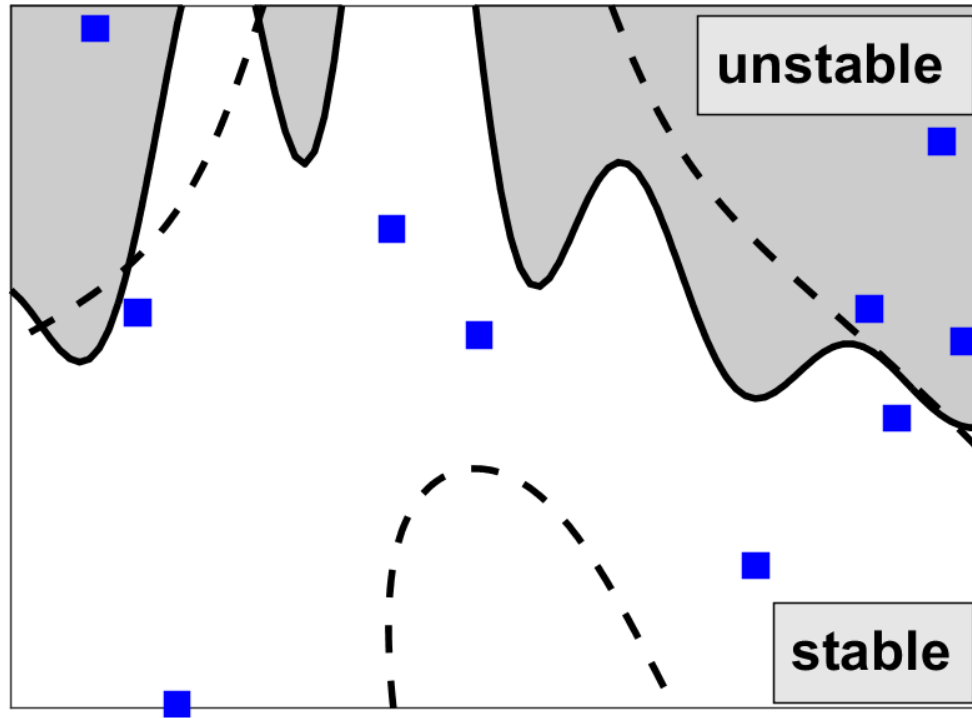
* Now at DeepMind

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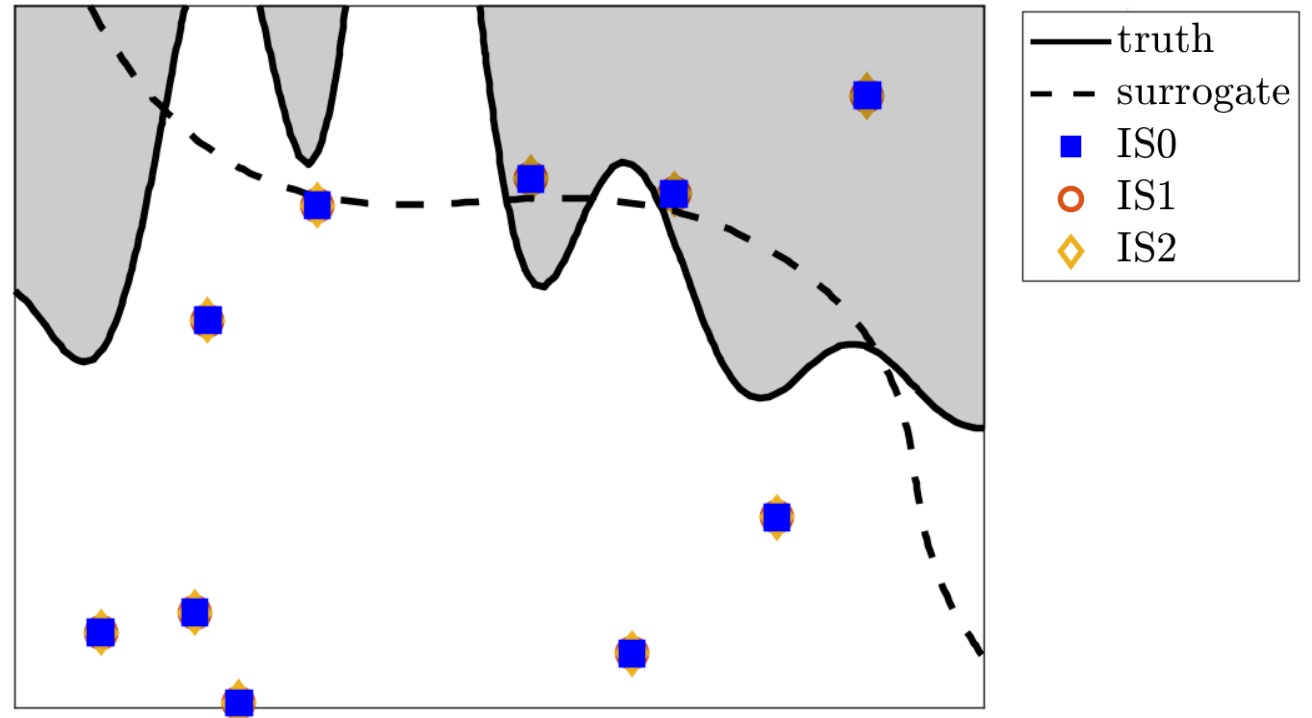


- Classification requires many information source (IS) evaluations
- Active learning based on GP surrogate produces better classifiers at lower cost
- In many cases IS0 is expensive, but relatively inexpensive (biased) IS are available
- **How to leverage all IS to produce accurate classifier at lower cost?**

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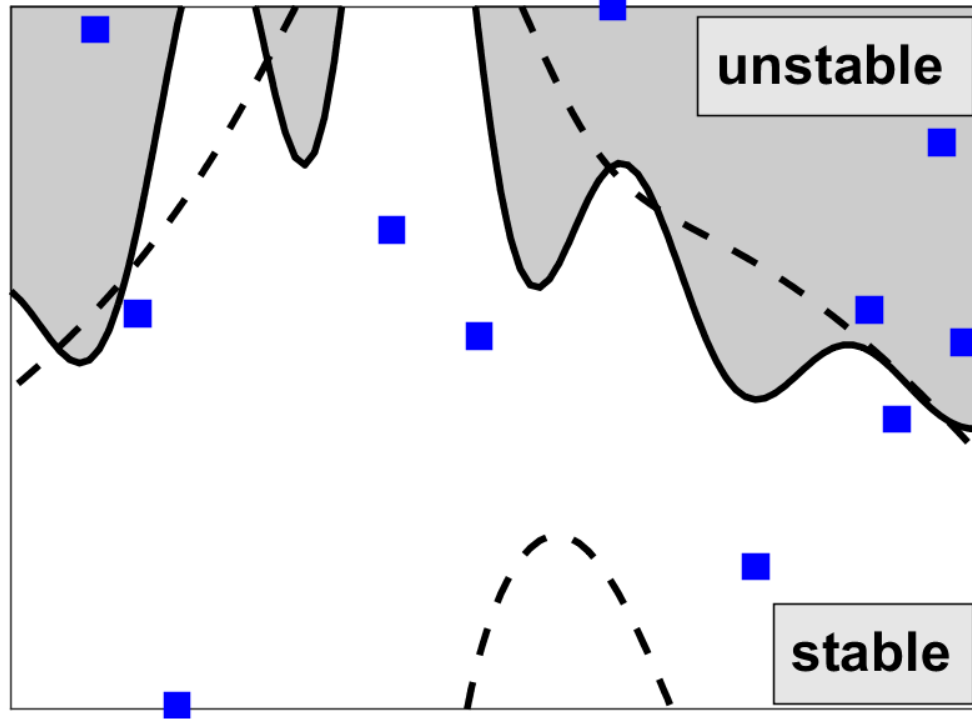
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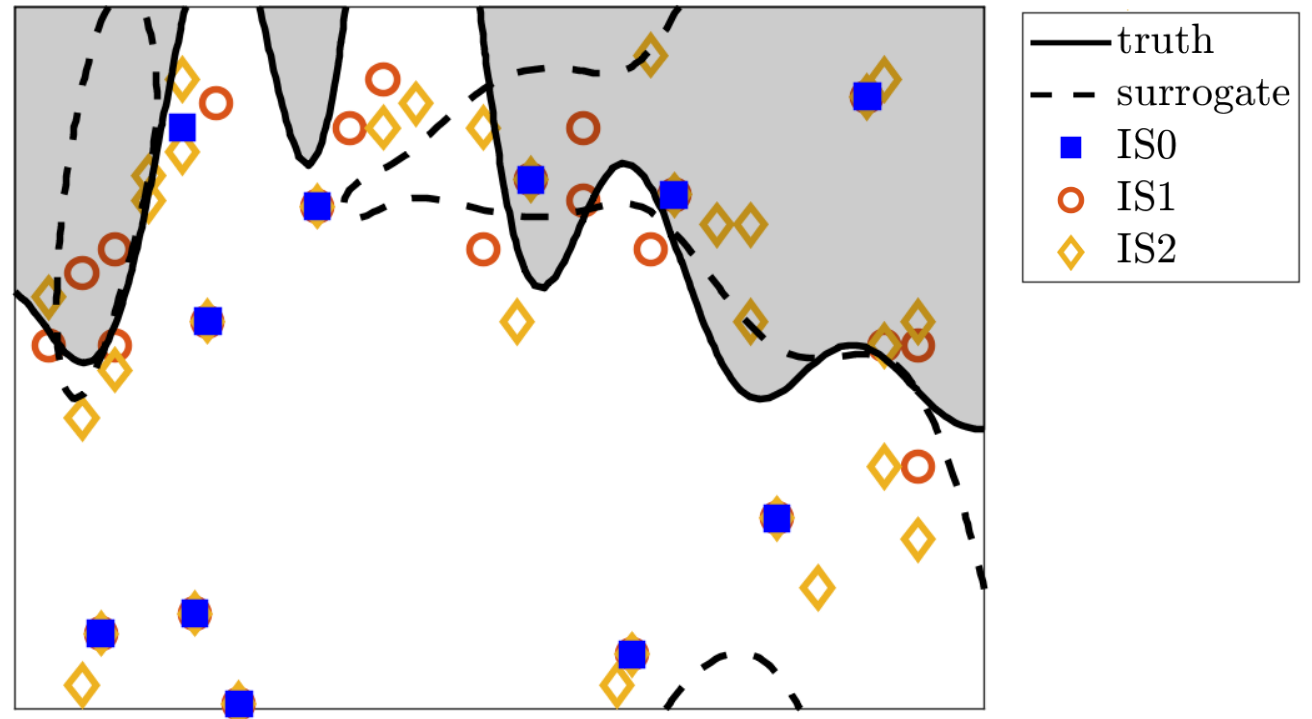
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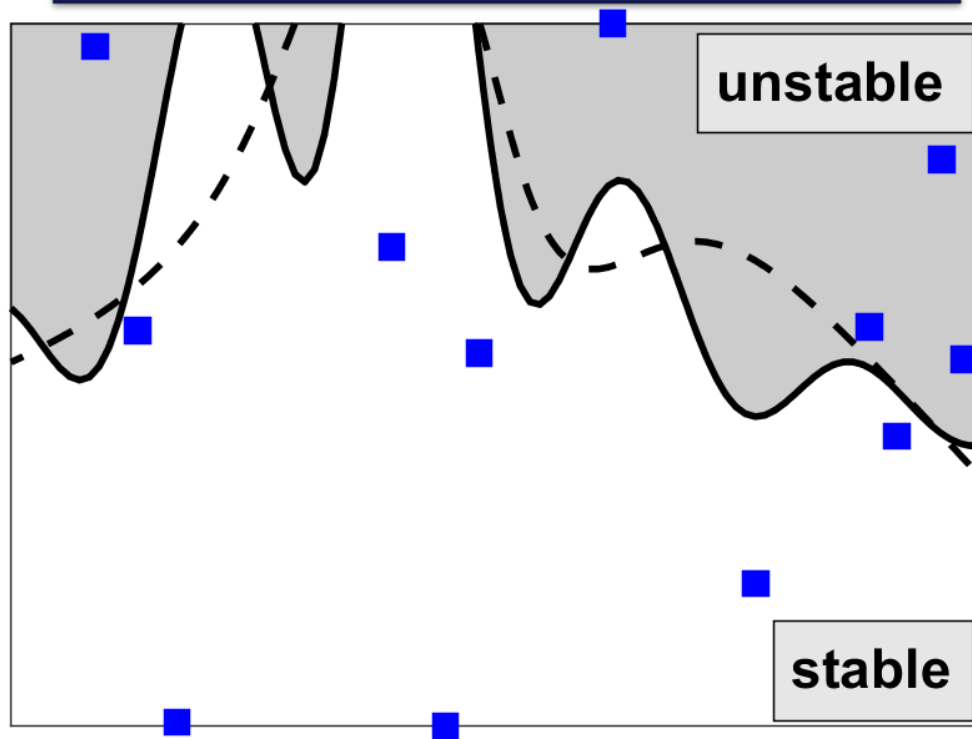
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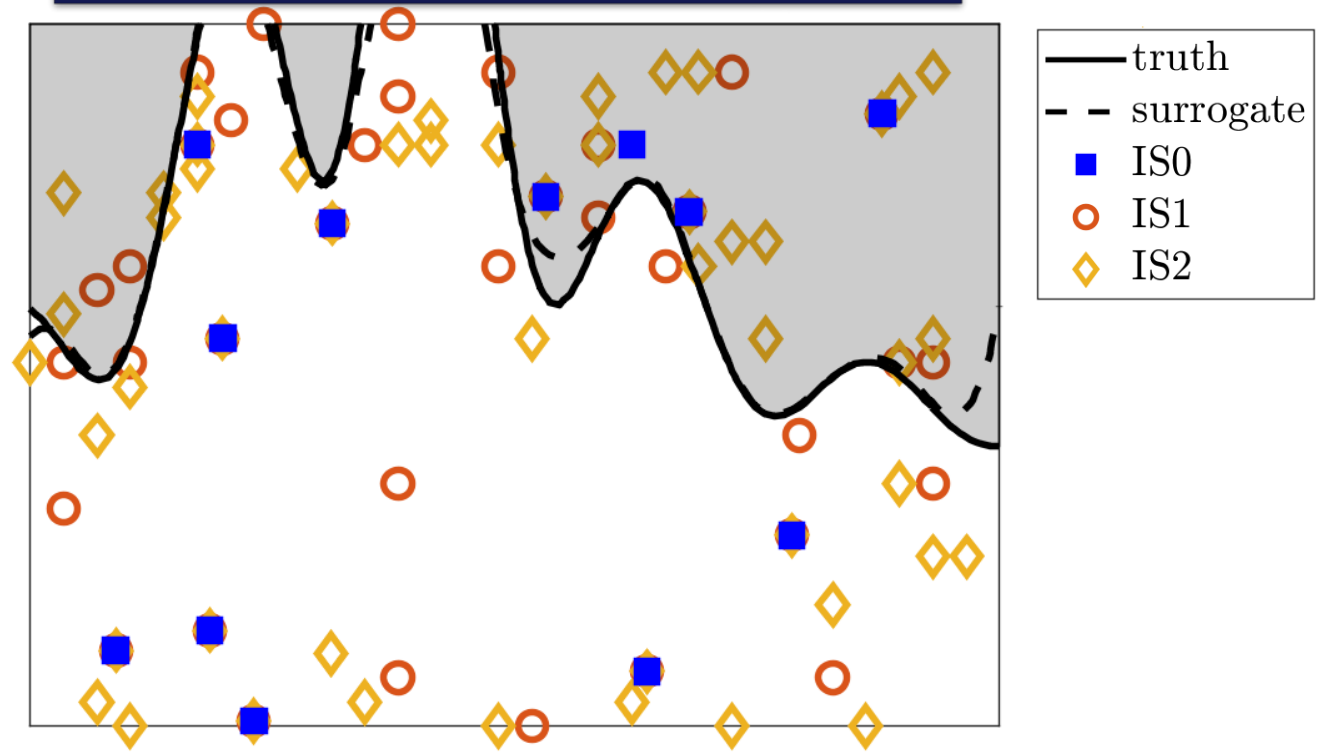
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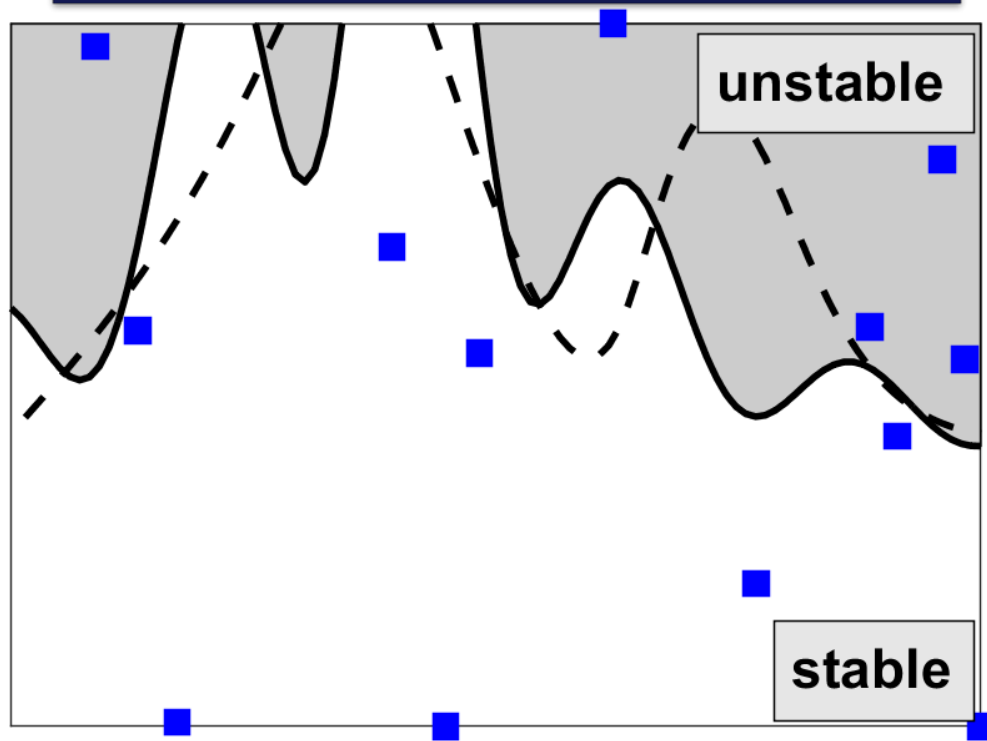
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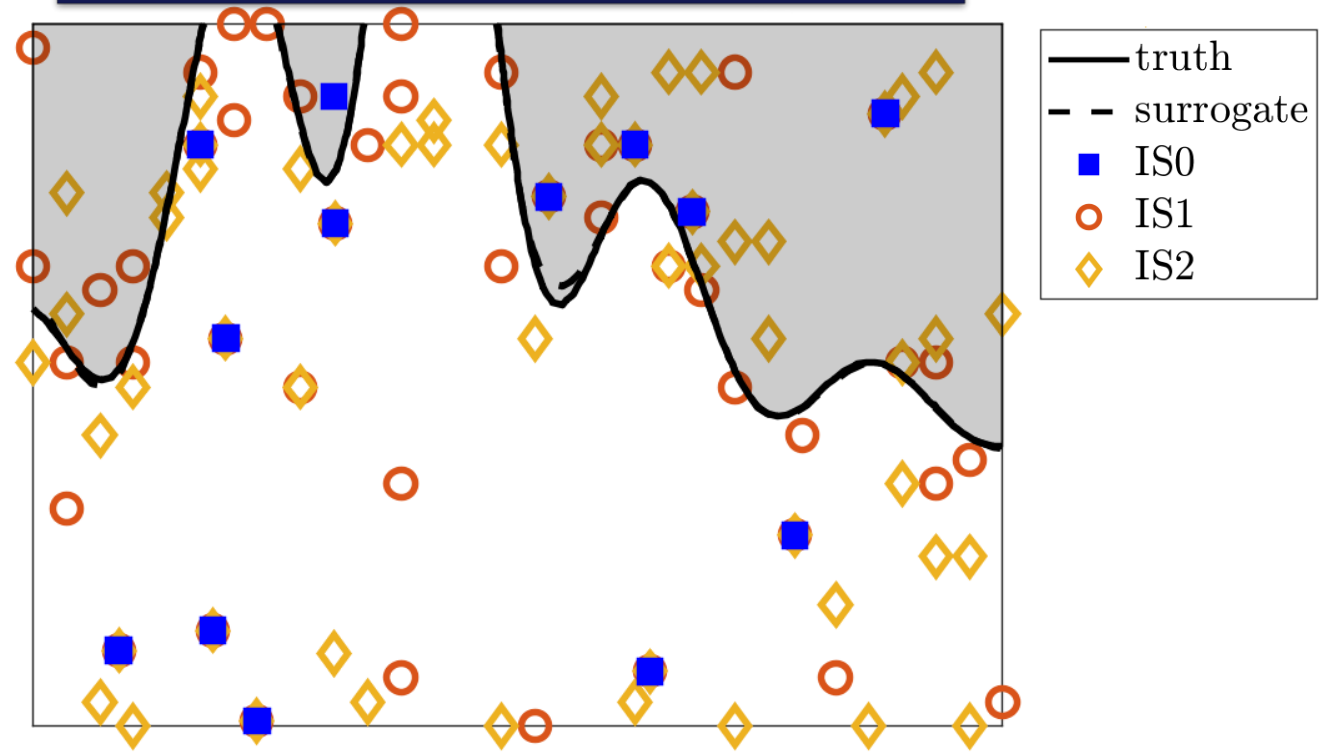
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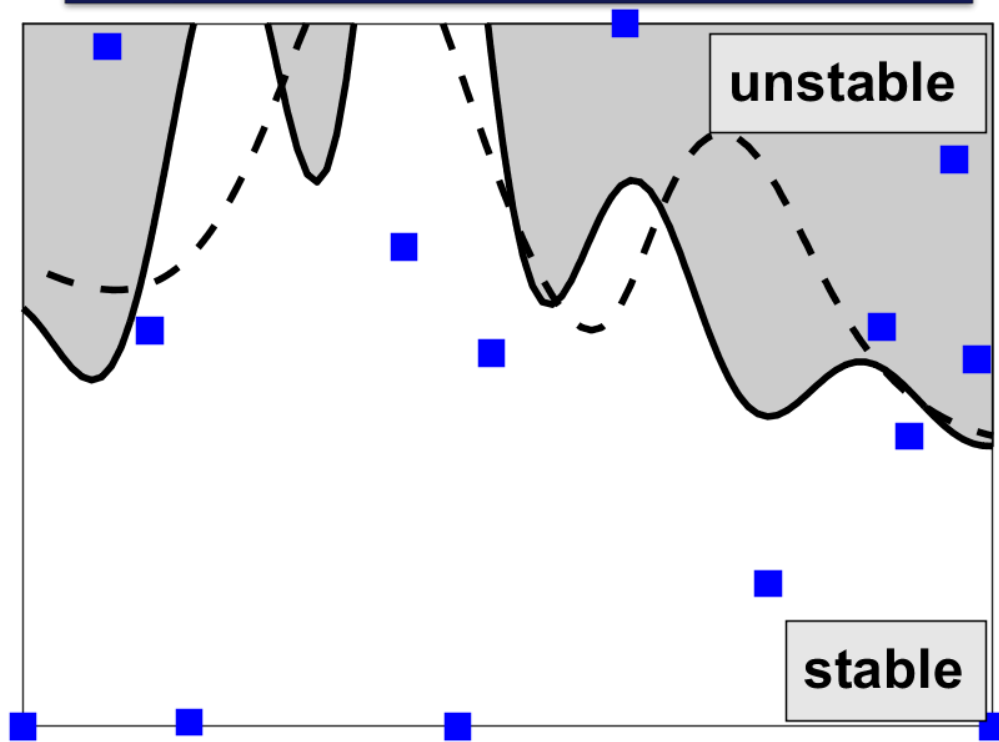
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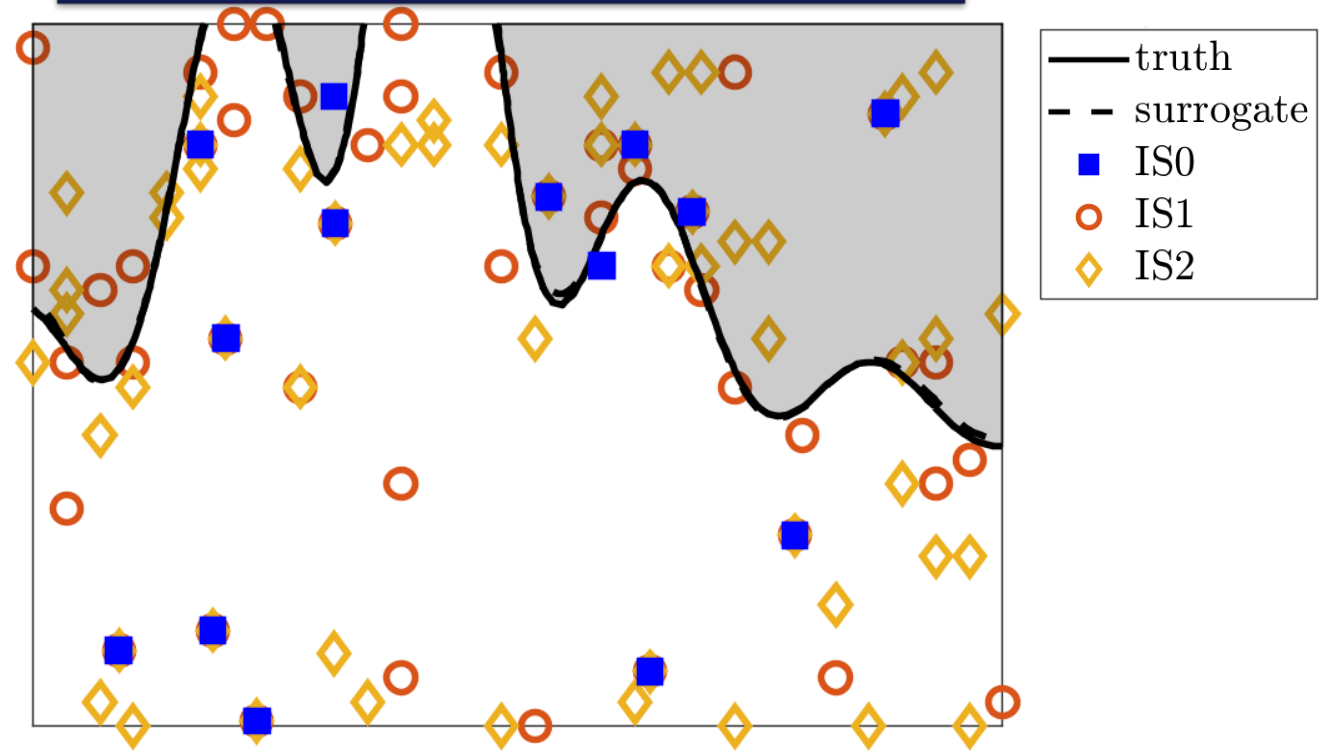
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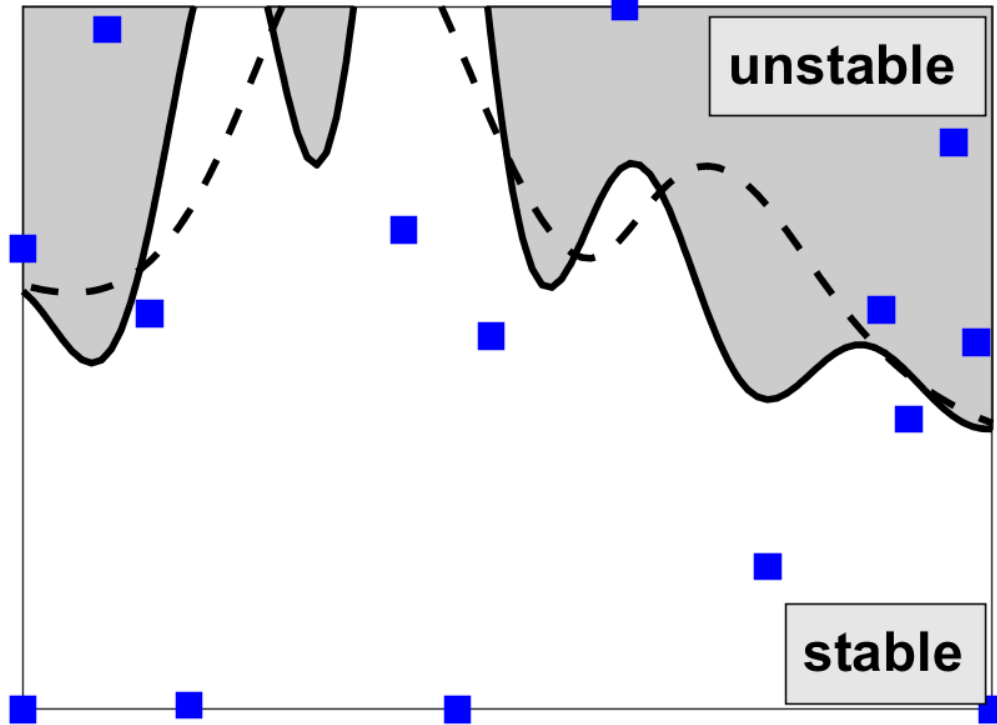
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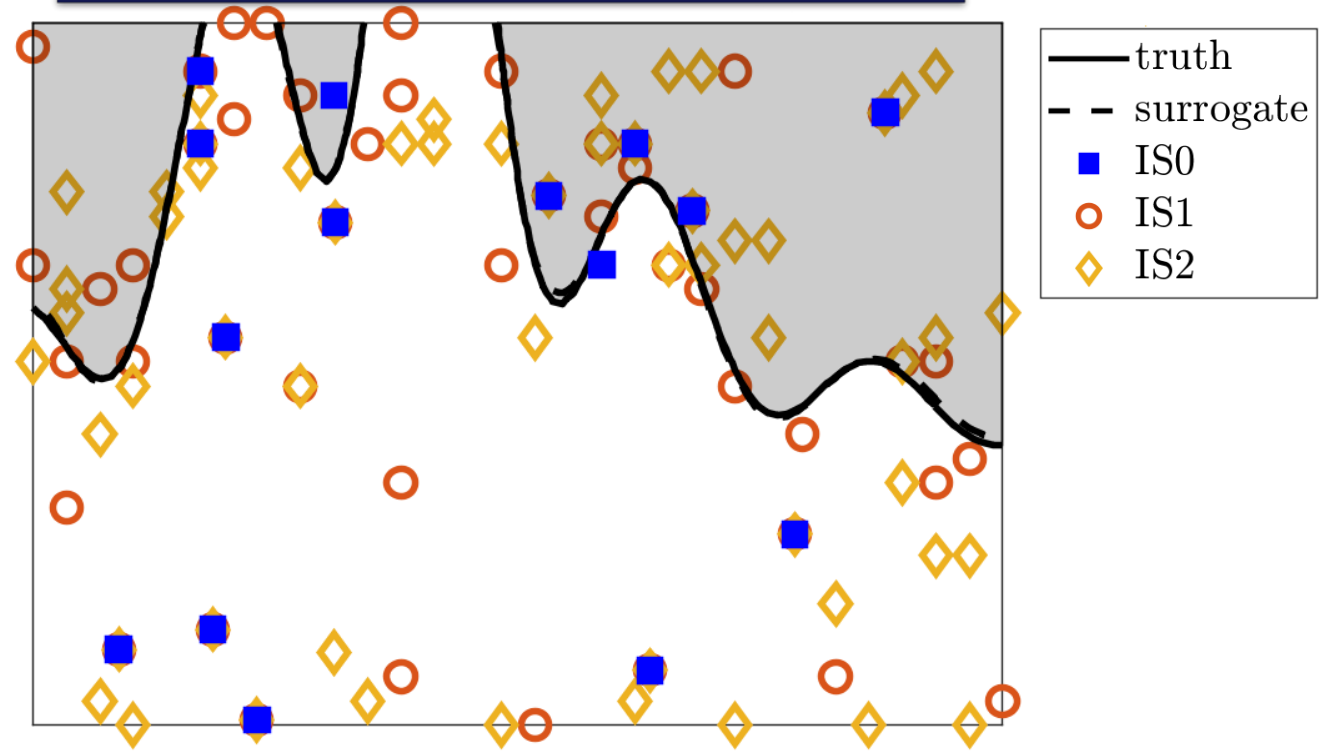
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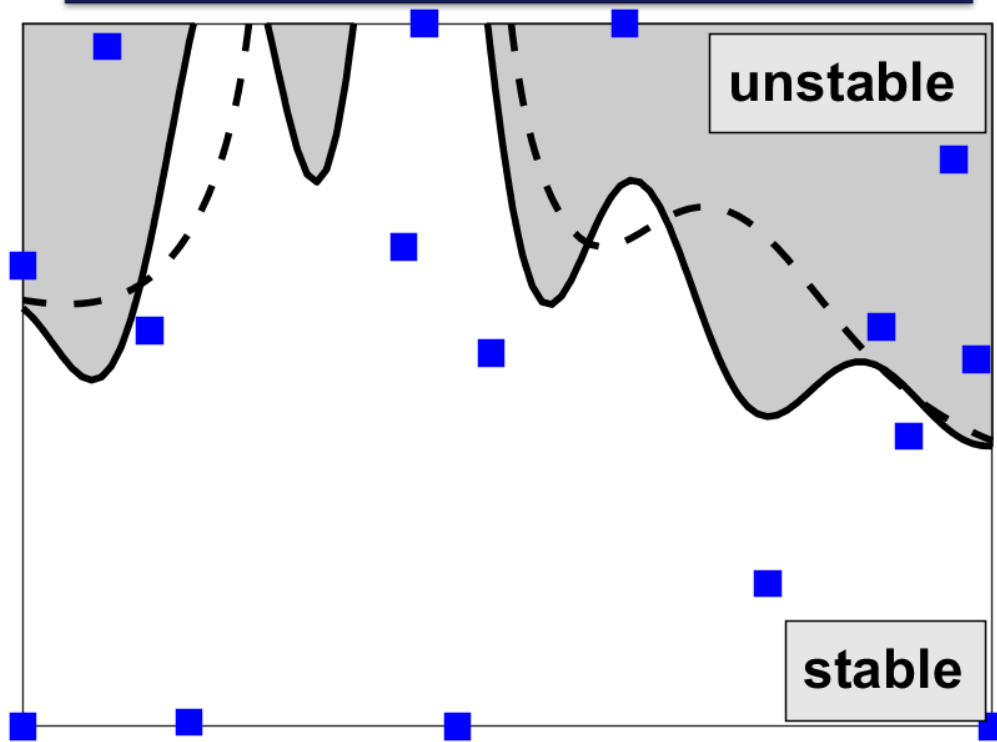
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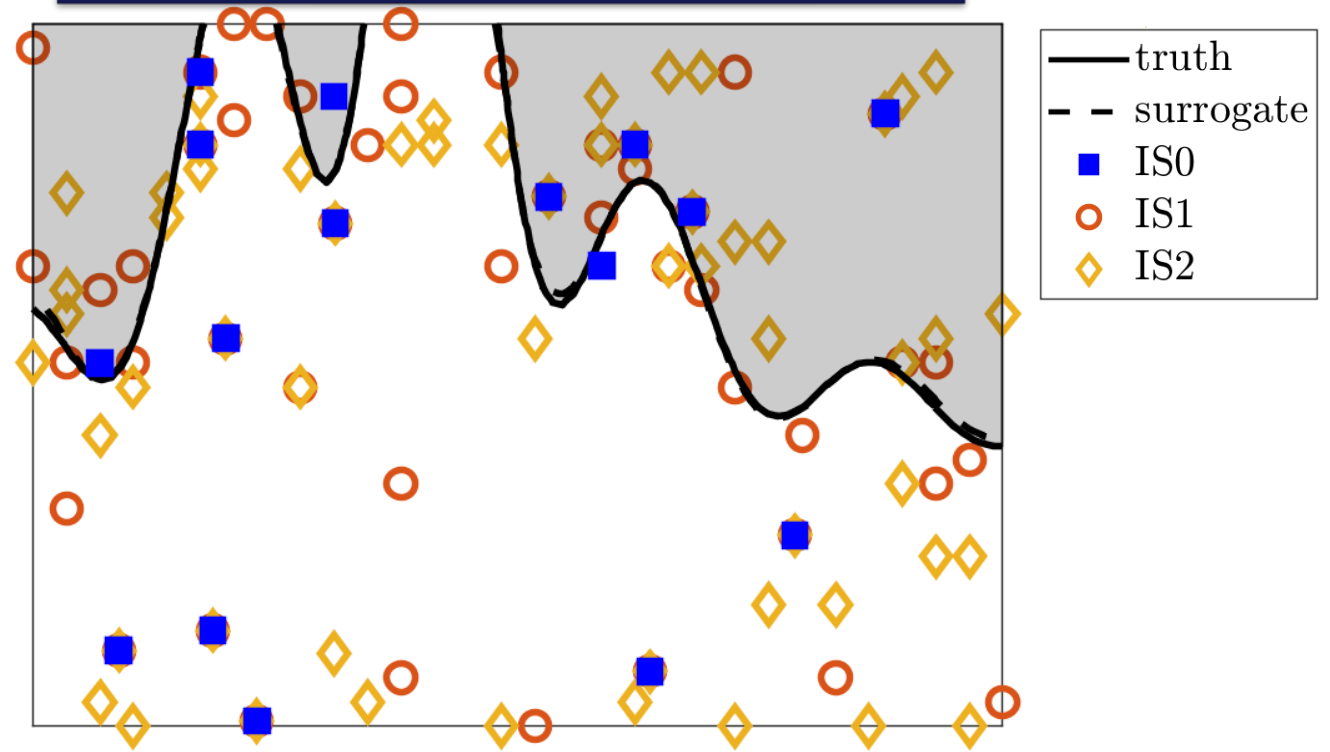
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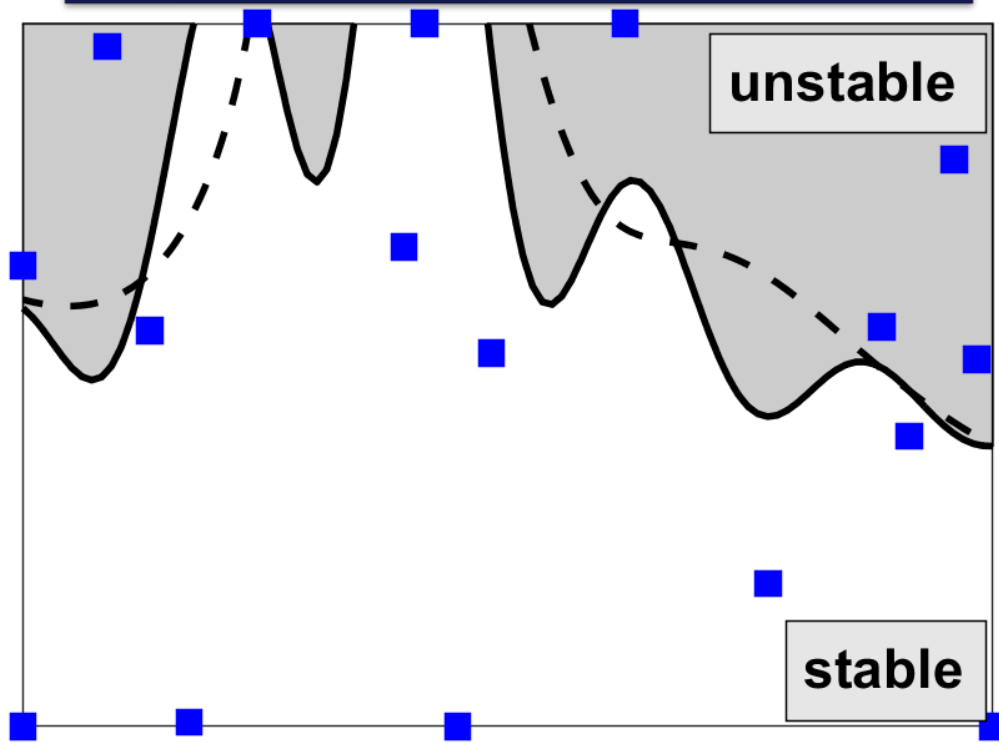
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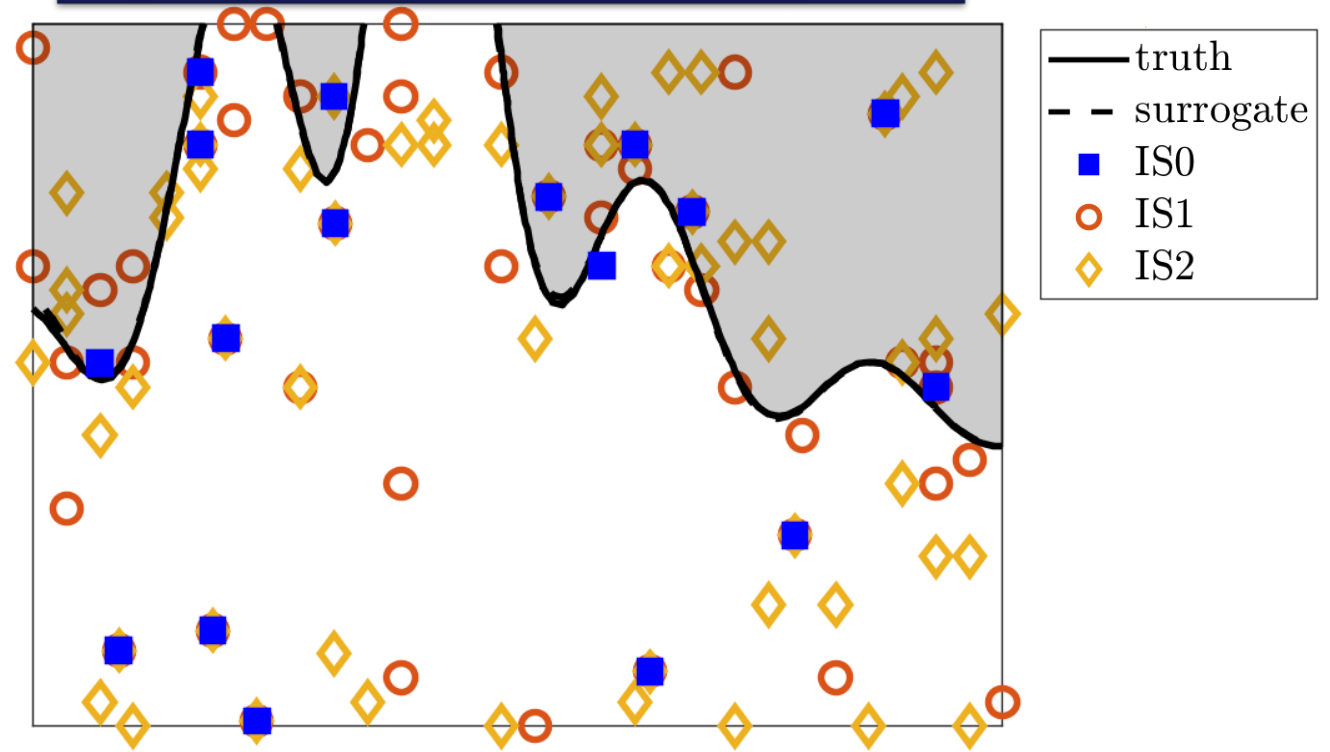
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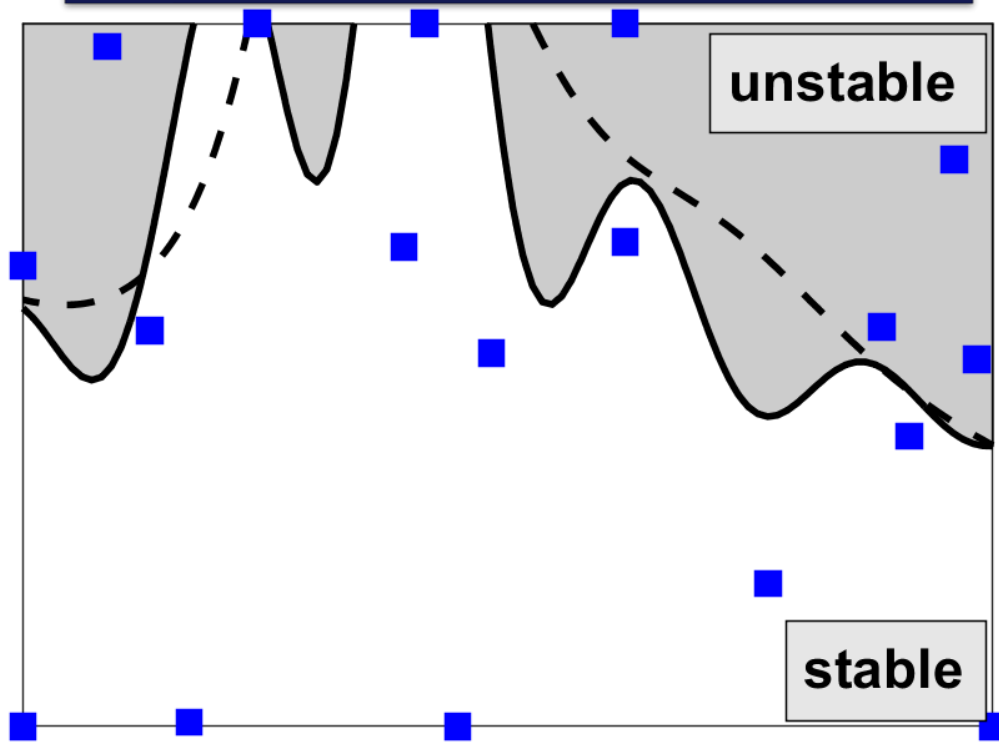
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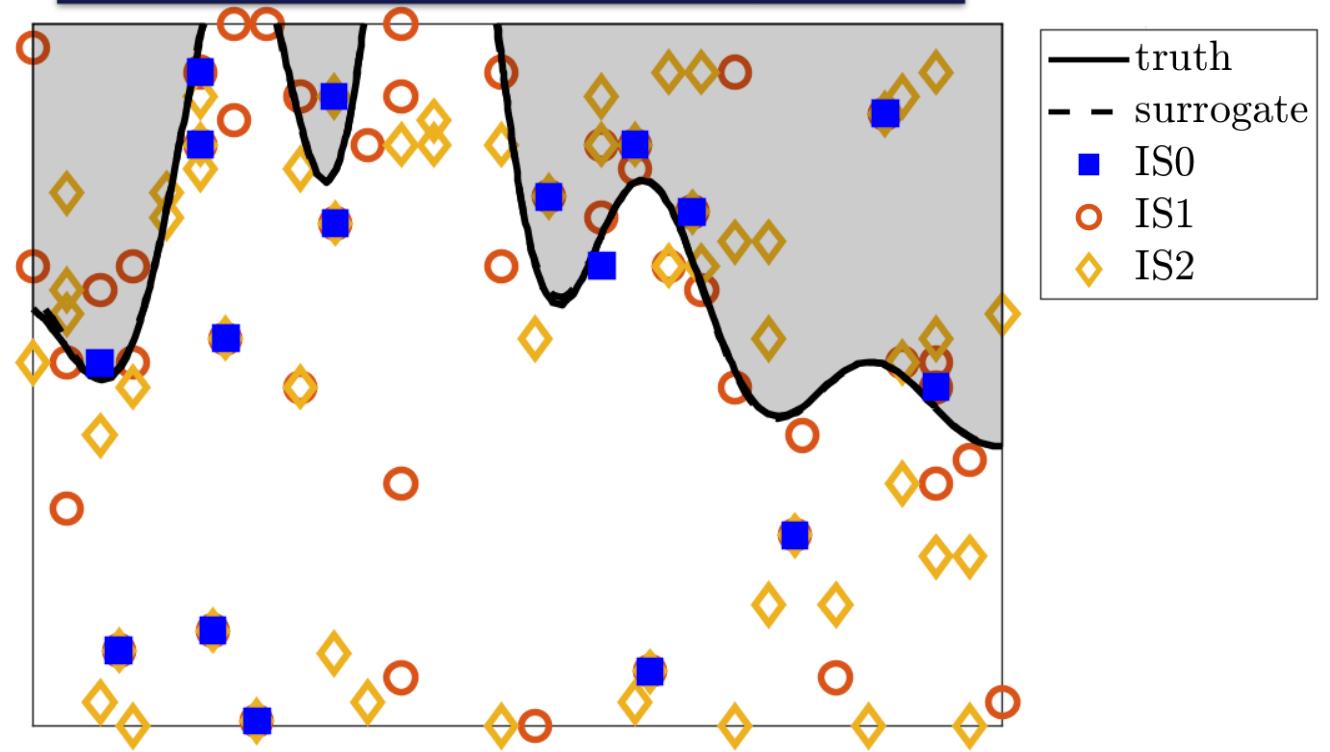
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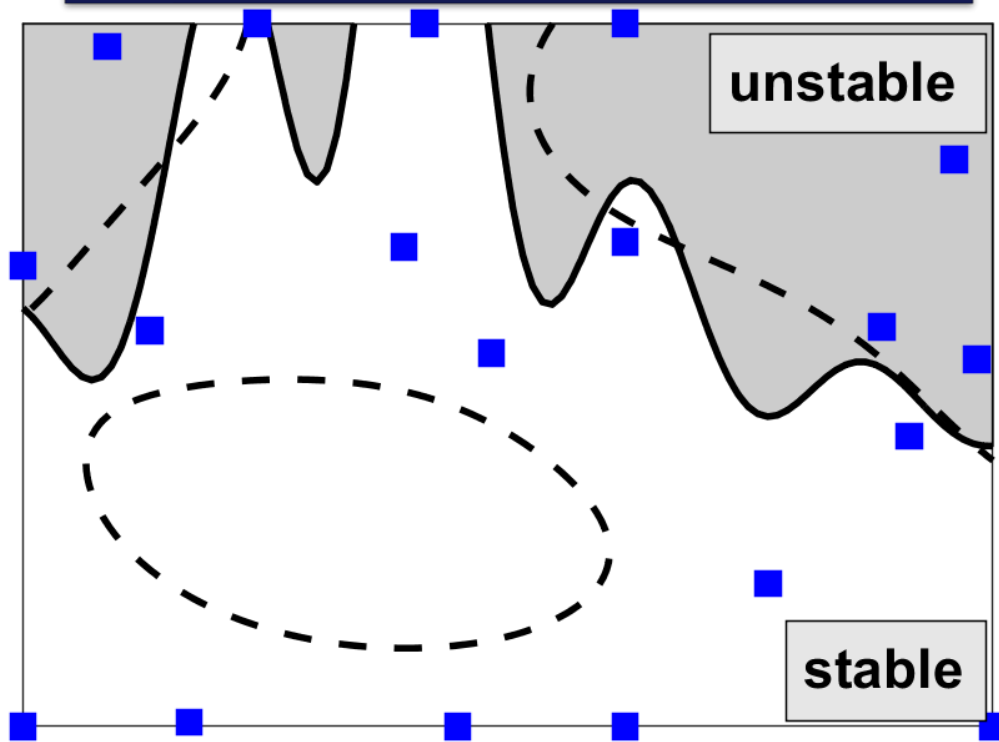
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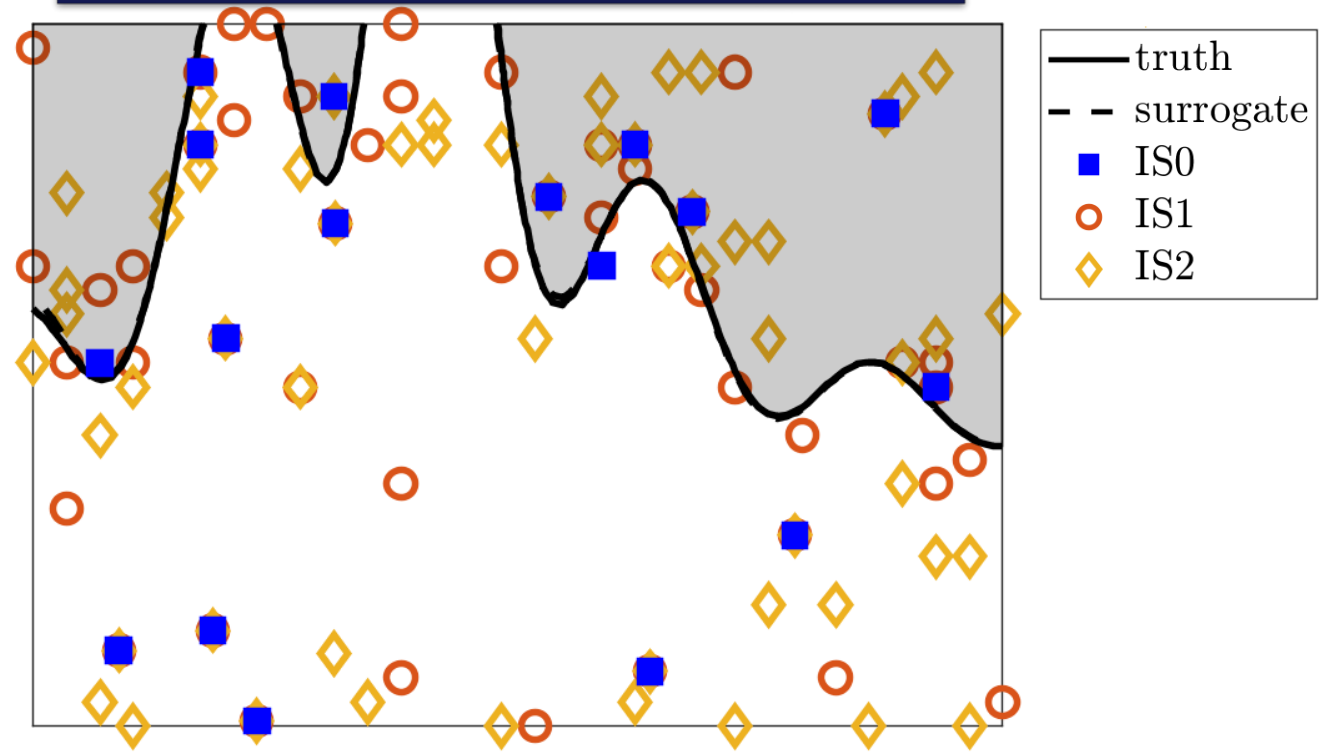
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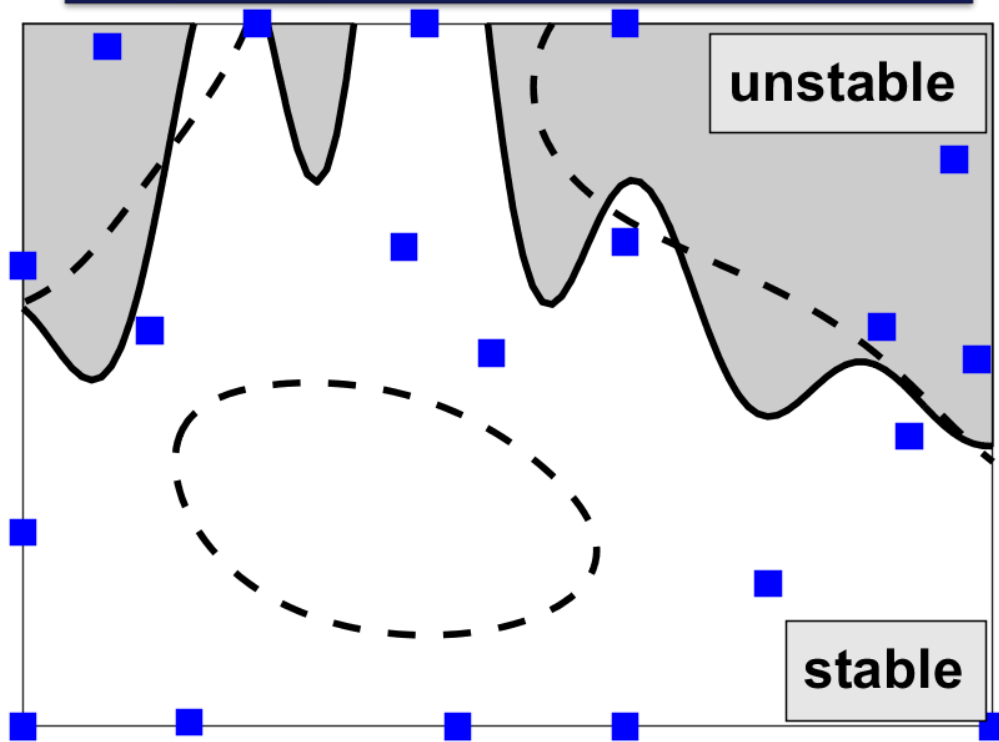
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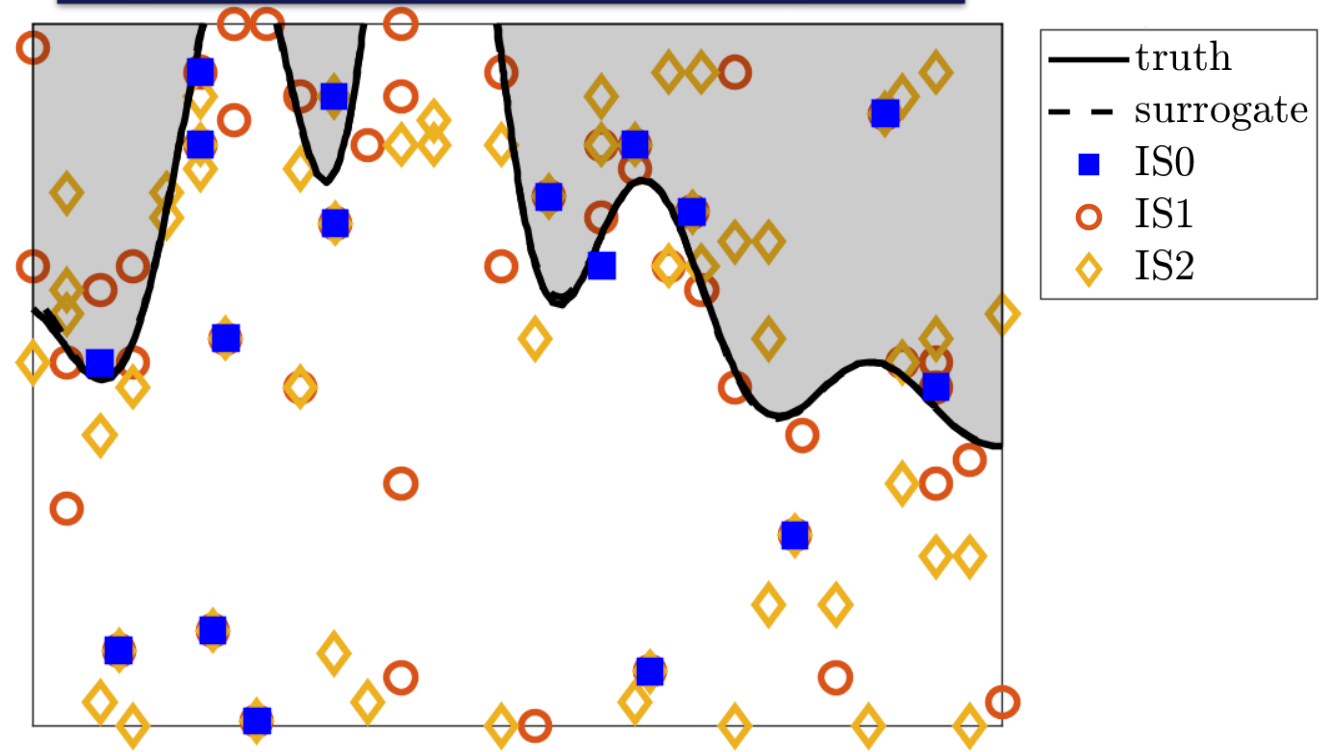
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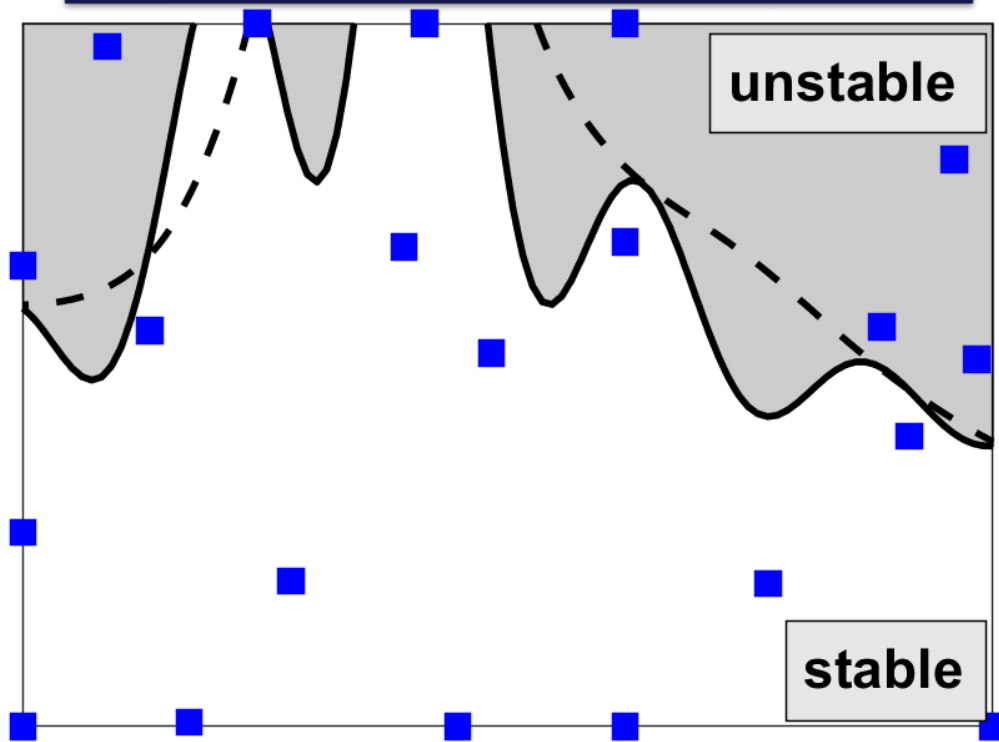
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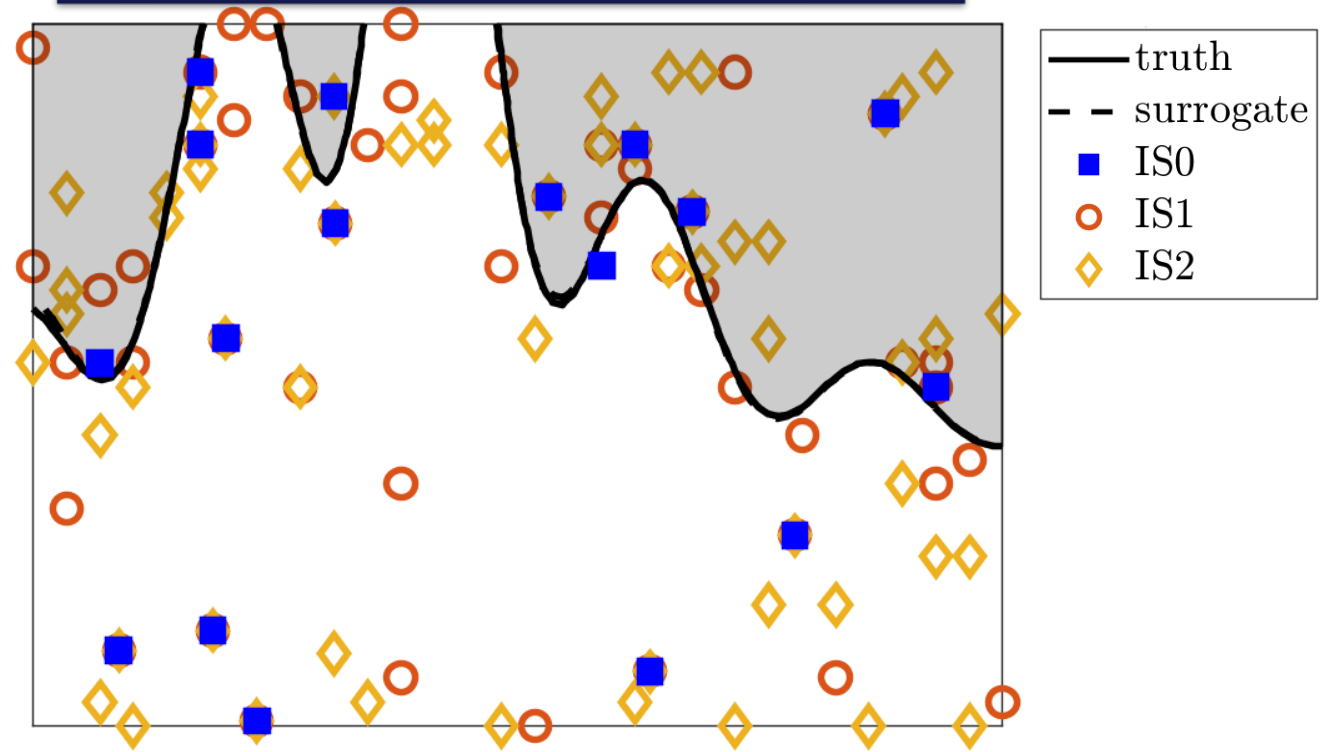
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Contributions

- **Contour entropy:** measure of uncertainty about the location of the zero contour of function approximated by statistical surrogate model
- **Decision mechanism:** maximizes average reduction of contour entropy via one-step lookahead approach
- **CLoVER (Contour Location Via Entropy Reduction):** algorithm that combines data from multiple information sources to locate contours of expensive functions at low cost

Poster AB #99

- **CLoVER**: Contour location via entropy reduction leveraging multiple information sources
- Thursday Dec 6th, Poster Session B, 5-7pm
- Room 210 & 230