

Improved Experiment Design for the Identification of Complex Real-World Systems

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Problem description:

- Optimal experiment design is a nonconvex problem
 - Nonlinear system, many input signals
 - Lack of a good initial guess for the input signal
- Performing experiments is expensive
- Currently used methods rely on engineering intuition

Suggested improvement:

1. Choose (simple) candidate excitation signals
2. Estimate information obtained from each candidate
3. Solve optimization problem to find best combination of candidates

Analyzed applications:

Ships, industrial robots

