

Recent progress in direct data-driven methods

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ABSTRACT

Direct data-driven methods gained popularity in systems theory, signal processing, and control due to easy access to large amounts of data, computational power to process the data, and complex dynamics of the underlying data-generating systems that renders classical model-based methods difficult to use. The challenge in this dynamically evolving field is to develop methods that are computationally efficient so that they can process the large amount of data and have provable theoretical properties so that they can be applied in safety critical applications.

The objective of the minisymposium is to present recent progress on the state-of-the-art theory and methods as well as practical applications of direct data-driven methods. The thematic areas are:

- adaptive methods for time-varying systems,
- methods of linear parameter-varying, continuous-time, and nD systems,
- uncertainty quantification of direct data-driven methods,
- optimal experiment design for direct data-driven methods, and
- applications of direct data-driven methods in, *e.g.*, power electronics, structural health monitoring, and traffic control.

References

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