

SPECIAL ISSUE OF INTERNATIONAL JOURNAL OF CONTROL:

Interval estimation applied to diagnosis and control of uncertain systems

First Call for papers

The estimation problem of unmeasured state and parameters for complex systems is of great importance for applications of the control theory. Emerging fields of applications require reliable approaches on estimation design for diverse classes of dynamical systems. In many areas, as in biology, for example, the intrinsic uncertainty of the models prevents for applications of the conventional estimation approaches. To overcome this obstruction, new techniques for estimation of uncertain systems have been proposed and developed. Uncertainty can be represented by unknown inputs/disturbances, noises, parameters or resulting from a transformation of nonlinear systems using Linear Parameter-Varying tools, where strong nonlinearities are modelled by uncertain parameters.

In some cases, an exact estimation of the state is not possible due to a lack of information about uncertainties. In such cases, set-membership techniques can be used to provide not only an approximation but also the set of all admissible values of the state/parameters, which are consistent with current measurements of inputs and outputs of the system. This special issue aims at presenting the last innovative results for design methods of set-membership estimation and their applications to robust control and FDI of complex systems. A second objective is to stimulate discussions on this subject.

This special issue is devoted to all topics related with interval estimation and its applications, including (but not limited to) the following subjects:

- Set-membership estimators
- Interval observers design
 - Continuous-time, discrete-time, sampled systems
 - Linear, nonlinear, time-varying, time delay, PDE models
 - Switching and hybrid systems
- FDI using interval tools
- Output dynamic control using interval observers
- Fault tolerant control based on set estimation
- Applications of interval estimation techniques

All submissions will be reviewed following the standard procedures of the International Journal of Control, and acceptance will be limited to papers requiring only moderate revision.

Submission details:

Prospective authors are requested to submit their manuscripts online by June 15th, 2018, to: <https://mc.manuscriptcentral.com/tcon>. Please follow the instructions under "Author Centre" and select manuscript type "Interval estimation"). It would be helpful if you could inform the guest editors in advance of your intention to submit a paper.

For further information, please contact the guest editors.

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