

Special Issue

New Approaches for System Identification Problems

Message from the Guest Editors

System identification is the main framework in many important applications, e.g., acoustic echo cancellation, source separation, noise reduction, channel equalization, and machine learning. In numerous system identification problems, the unknown system can be modelled as a finite impulse response filter with a large number of coefficients, which raises additional challenges in terms of performance and complexity. Moreover, many of these systems may be time-variant; therefore, the impulse responses may change drastically over a short period of time. These aspects influence the overall performance of the global system. A natural approach is to exploit some specific characteristics of the systems to be identified, like intrinsic symmetric properties. In this context, it would be of high interest to develop new techniques for the identification of such challenging systems. Research papers, as well as short communications and review articles comprising new approaches in this area are welcome in this Special Issue.

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Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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