

Special session

"Fuzzy transforms: theory and applications to data analysis"

Description

The theory of fuzzy (F)-transforms successfully links various transforms (Fourier, Laplace, integral, wavelet, etc.) with fuzzy approximation models. The general idea is to bring an original model into a special space where succeeding computations are easier. Beside well justified theory the F-transform has many sophisticated applications in image, signal and time series processing. Moreover, it is successfully applied in numerical methods for solution of differential and integro-differential equations including the case when uncertainty is included in their formulation.

Objectives and topics

The aim of this special session is to present recent developments and trends in the theory and applications of the F-transform, including all those mentioned above. Besides theoretical aspects, the session will be focused on advanced applications of the F-transform in data analysis including handling of big data.

We invite contributions that extend traditional ways of data analysis and propose adequate methods for various kinds of data processing including, but not limited to the following topics:

- Theoretical aspects of the F-transform,
- Numerical methods on the basis of F-transform,
- Big data processing on the basis of the F-transform,
- Time series analysis and forecasting (time series trend extraction, local trend estimation and their models),
- Fuzzy time series, granular time series and their models.

Organizers

Prof. Irina Perfilieva, Institute for Research and Applications of Fuzzy Modeling of the University of Ostrava, Czech Republic.

Email: Irina.Perfilieva@osu.cz

Prof. Vilém Novák, Institute for Research and Applications of Fuzzy Modeling of the University of Ostrava, Czech Republic.