

Iterative Filtering for signals defined on the sphere: problems related to data analysis in non-Euclidean spaces

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Abstract

Since real-life data are non-stationary, it would be better to study them through non-stationary techniques, and ‘Fast Iterative Filtering’ has proven to be an interesting and useful method to achieve this goal and extract hidden structures, especially in classic 1D or 2D cases [3]. But some problems arise in non-Euclidean settings since the filtering relies on convolution.

After developing a continuous operator we analysed its discretisation through the Generalised Locally Toeplitz (GLT) sequences of matrices [2]. Using some property from the GLT theory we studied the convergence of this procedure [1].

In this talk, after a brief review on the topic, we will describe some problems related to this setting and what we have obtained so far to overcome them. We conclude our talk with a few examples of applications of this method to real life signals.

References

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