

## **Wolfgang Erb**

Computational harmonic analysis on graphs and networks

### Abstract

In this talk, we will give an overview about modern computational aspects of harmonic analysis on graphs and networks based on the spectral decomposition of the graph Laplacian. We will see how eigenvectors/eigenvalues of the graph Laplacian are connected to uncertainty principles and how classical concepts of harmonic analysis as positive definite functions and wavelets can be transferred to graph domains to efficiently approximate and decompose signals. We will further have a look at some interesting applications on graphs as, for instance, classification of signal data with graph basis functions (GBFs) and influence maximization on graphs.