

Graph Fourier transform

Complessità nei sistemi sociali

Lorenzo Dall'Amico



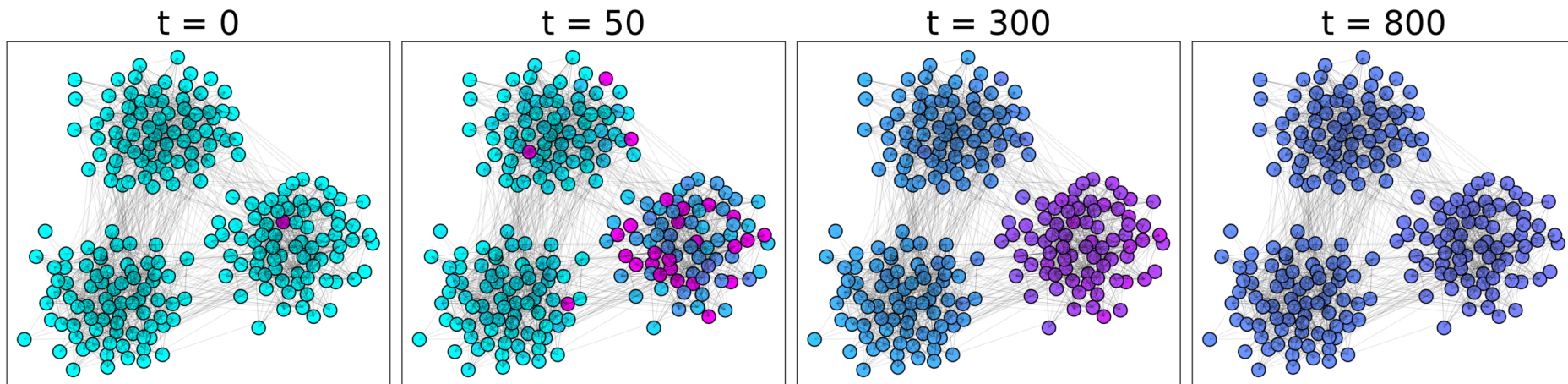
ISI
Foundation

- Email: `lorenzo.dallamico@{isi, unito}.it`
- Note: `lorenzodallamico.github.io/teaching`

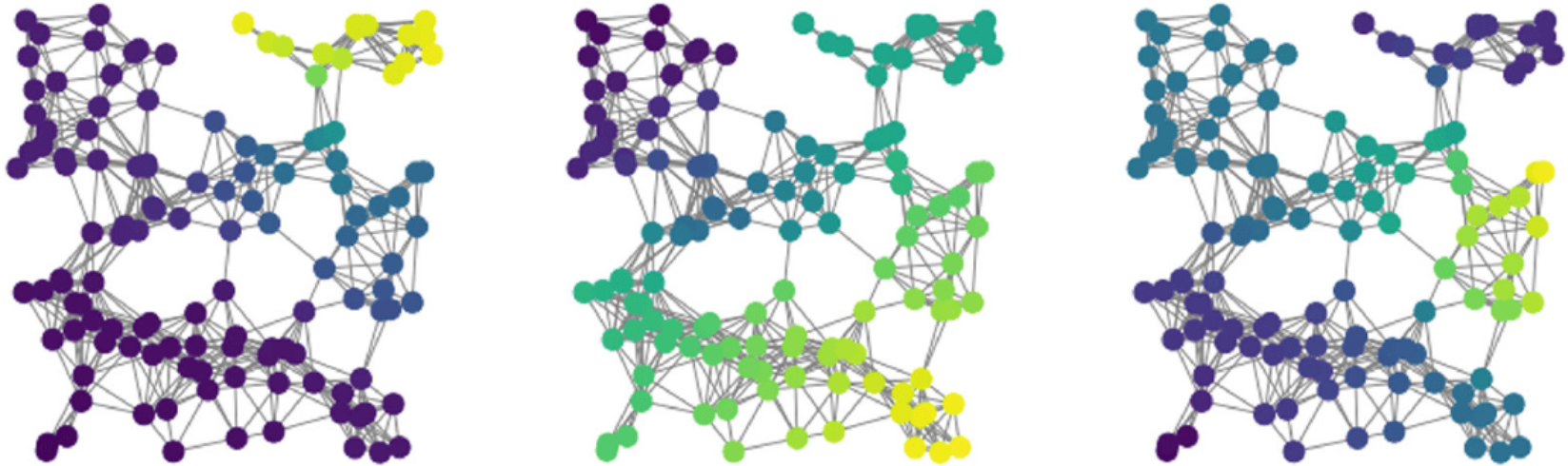


UNIVERSITÀ
DI TORINO

Diffusion on a graph with communities



Graph Fourier modes



Some graph Fourier modes on a graph. From left to right: the eigenvector associated to the second, third and fourth smallest eigenvalue of L . Color-map: positive values in yellow, negative ones in blue.

Tikhonov regularization

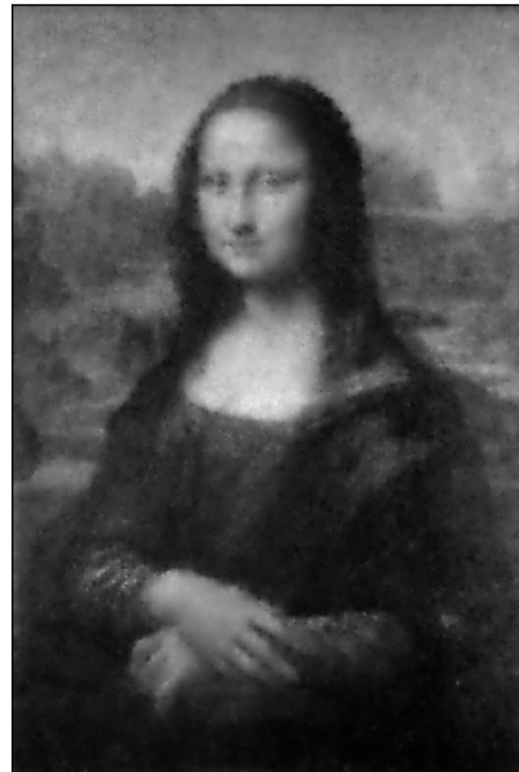
Original



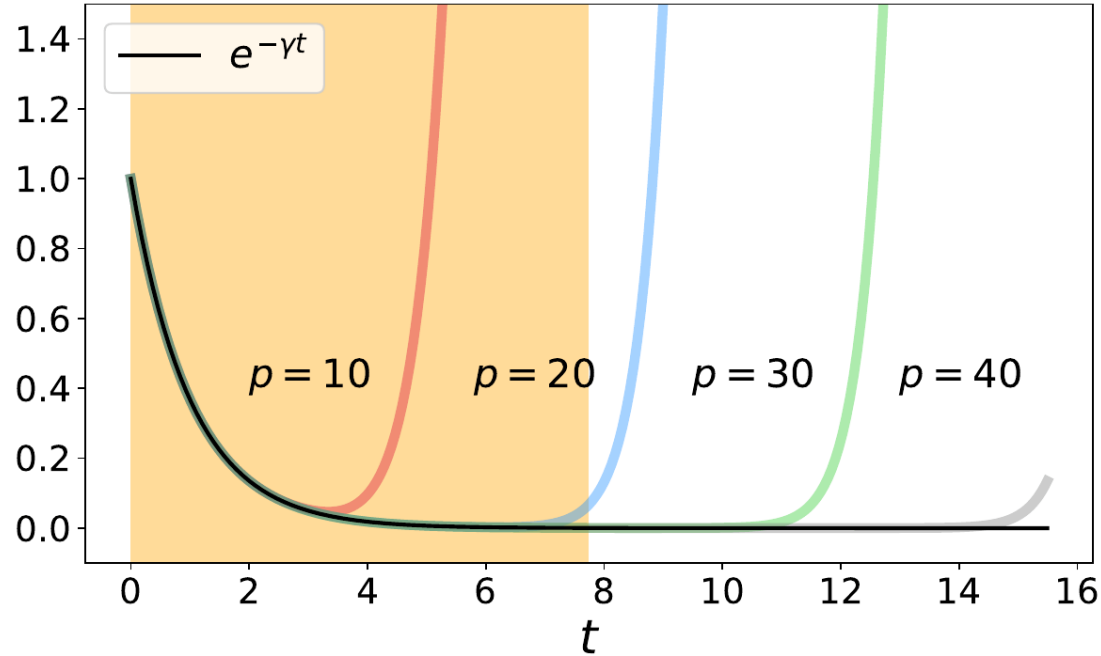
Measured



Reconstructed

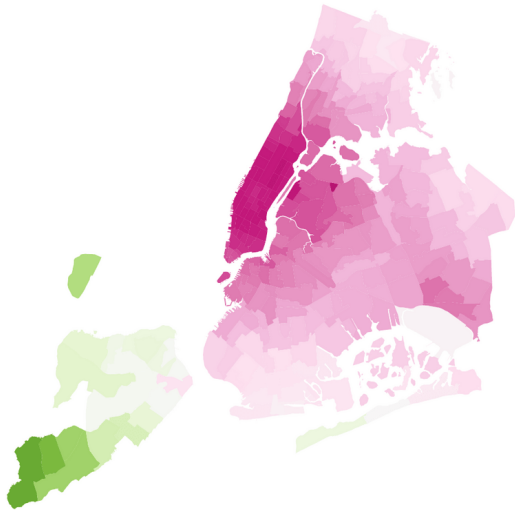


Polynomial approximation of the exponential filter

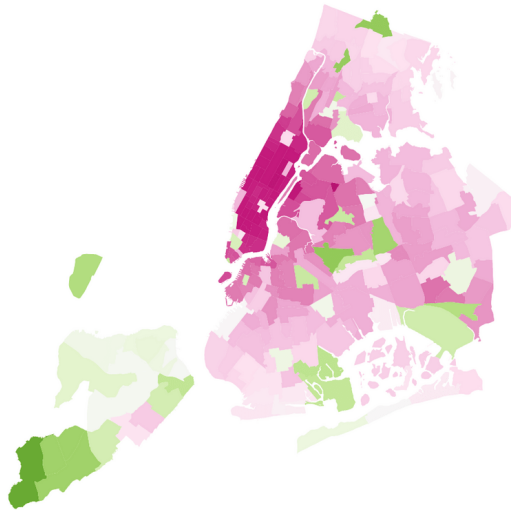


Signal filtering of NYC taxi fares

Original



Noisy



Reconstructed

