

Algorithm to construct Fuzzy Hyper-networks

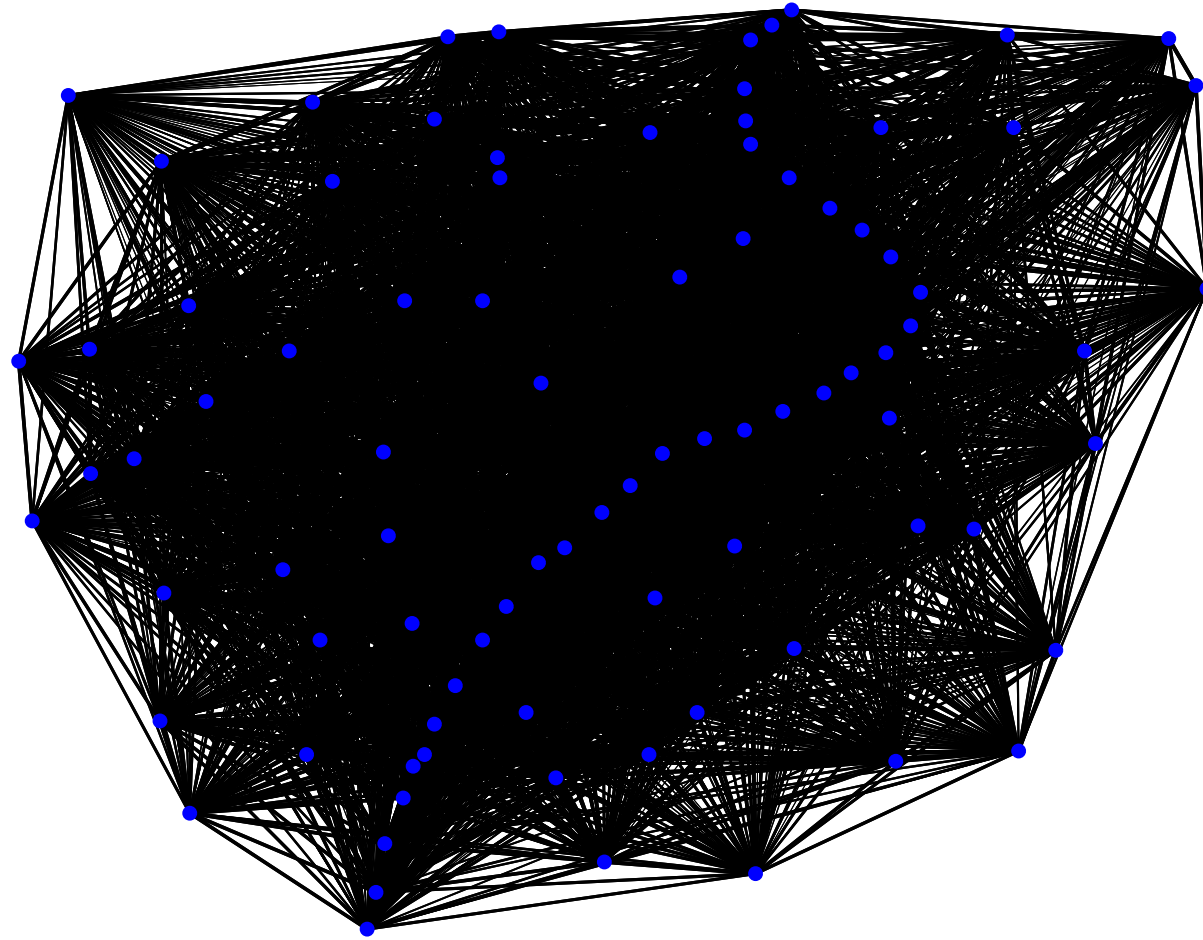
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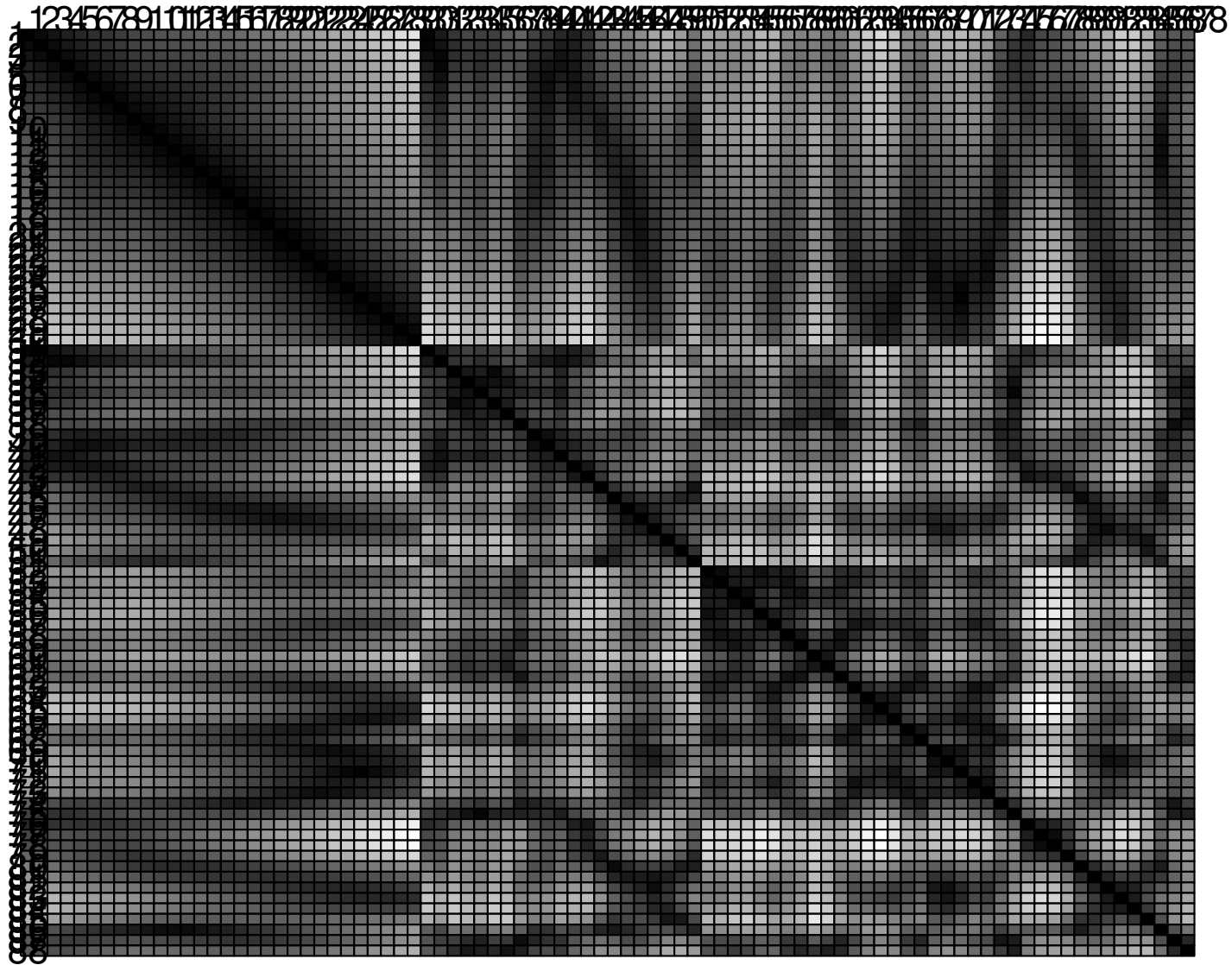
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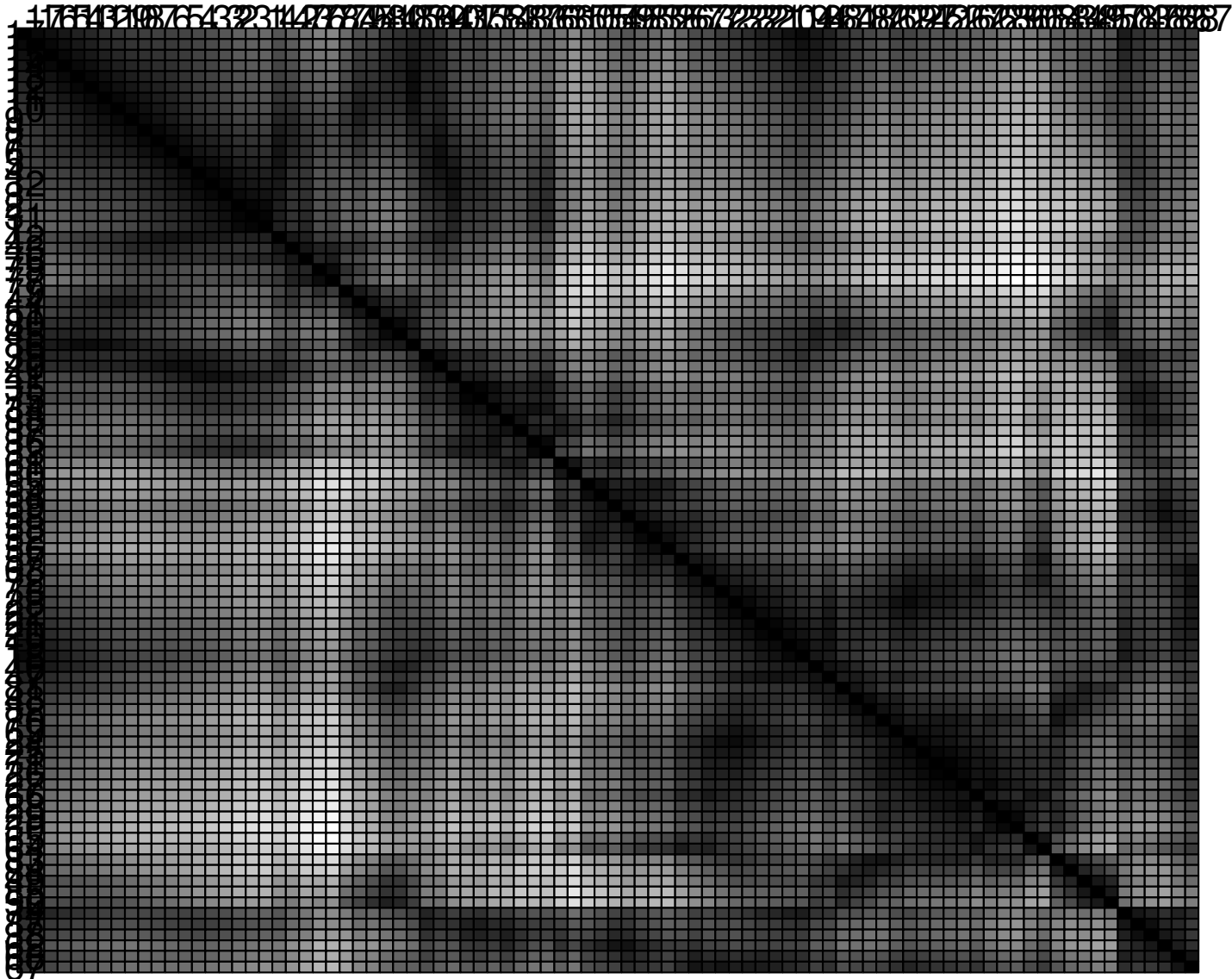
Initial network, number of nodes is 88



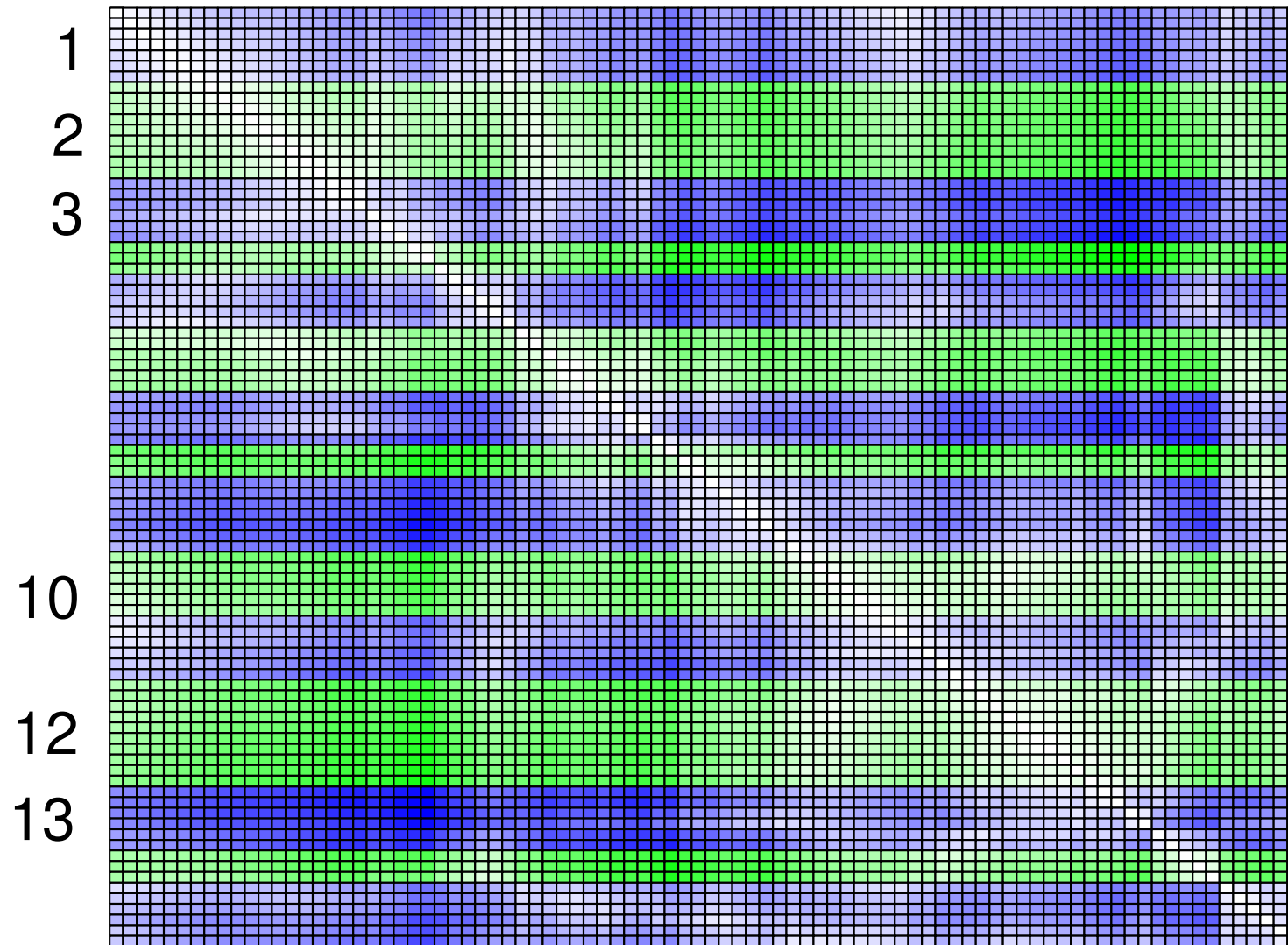
Adjacency matrix before reordering



Adjacency matrix after reordering



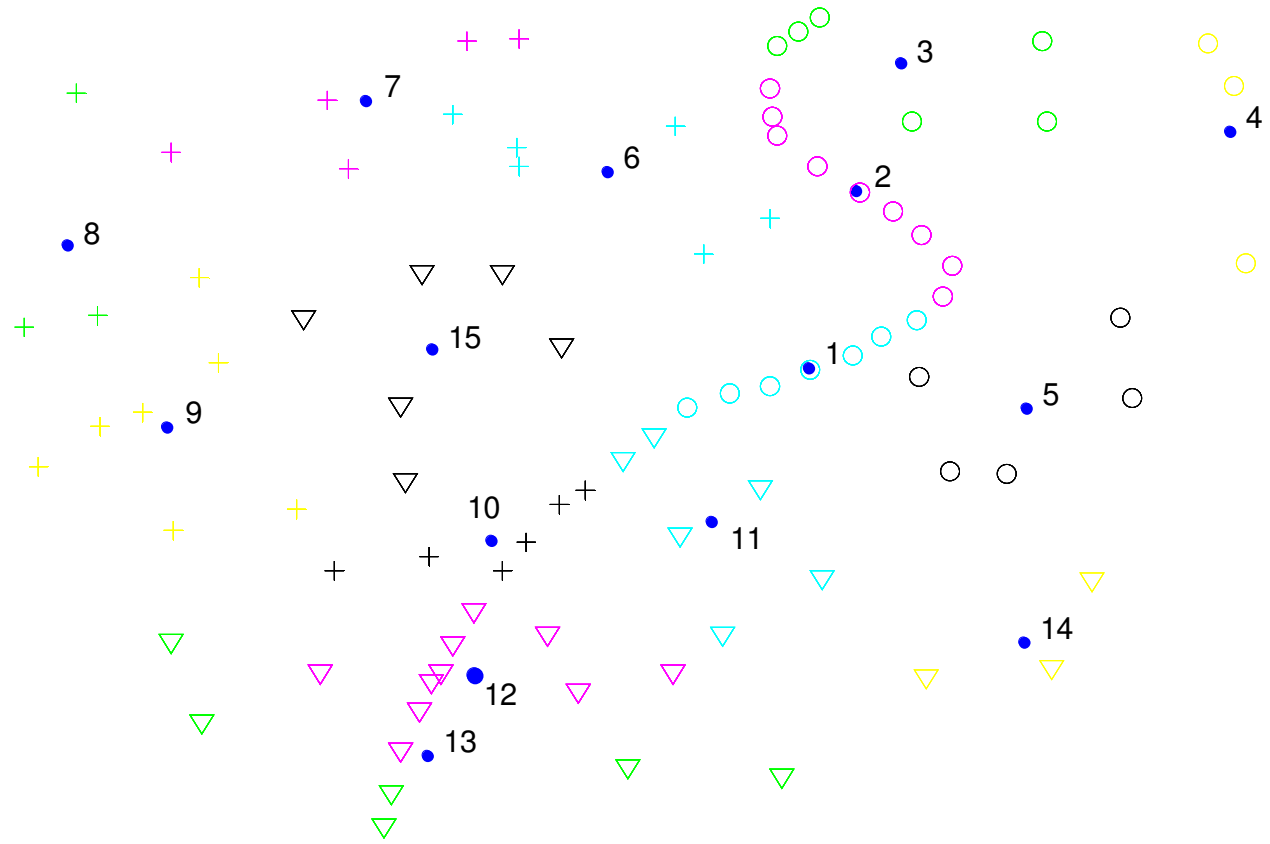
Adjacency matrix after grouping Average distance= 0.04676



Hypernodes

group factor=0.86

file :pockmarks4.m

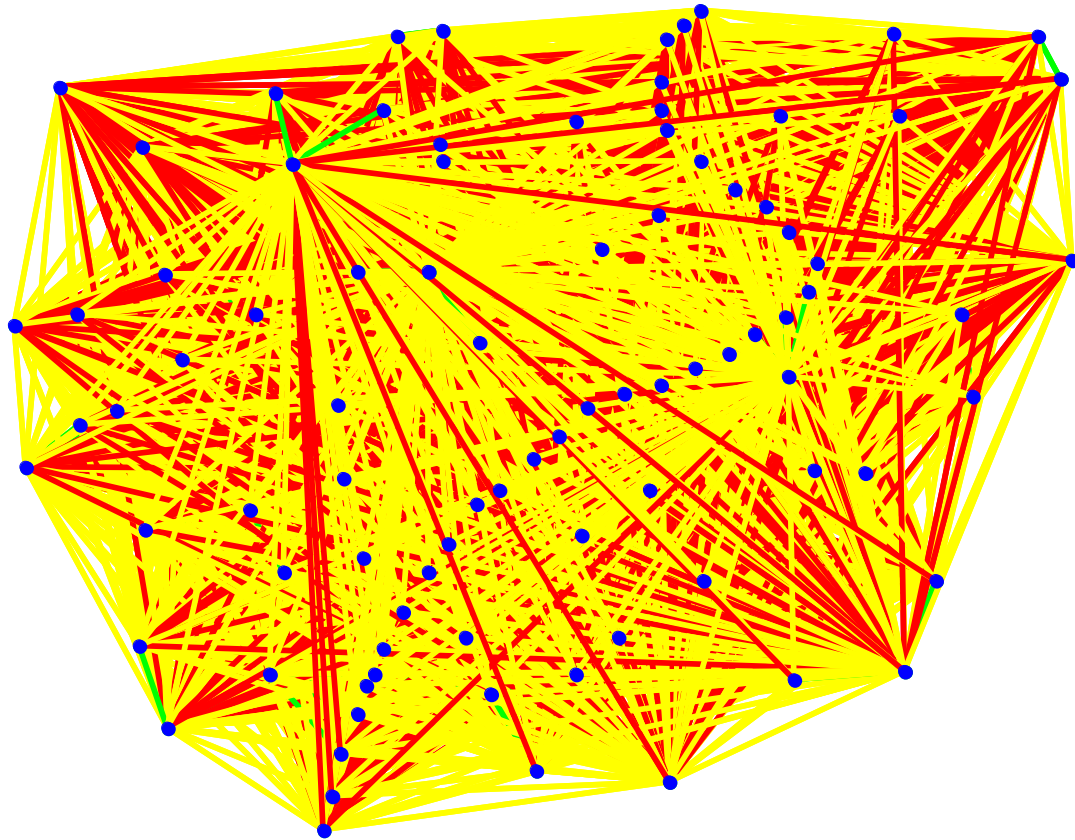


The network can be imagined embedded in a 2D-space so that the weights of the links represent the distance between the nodes.

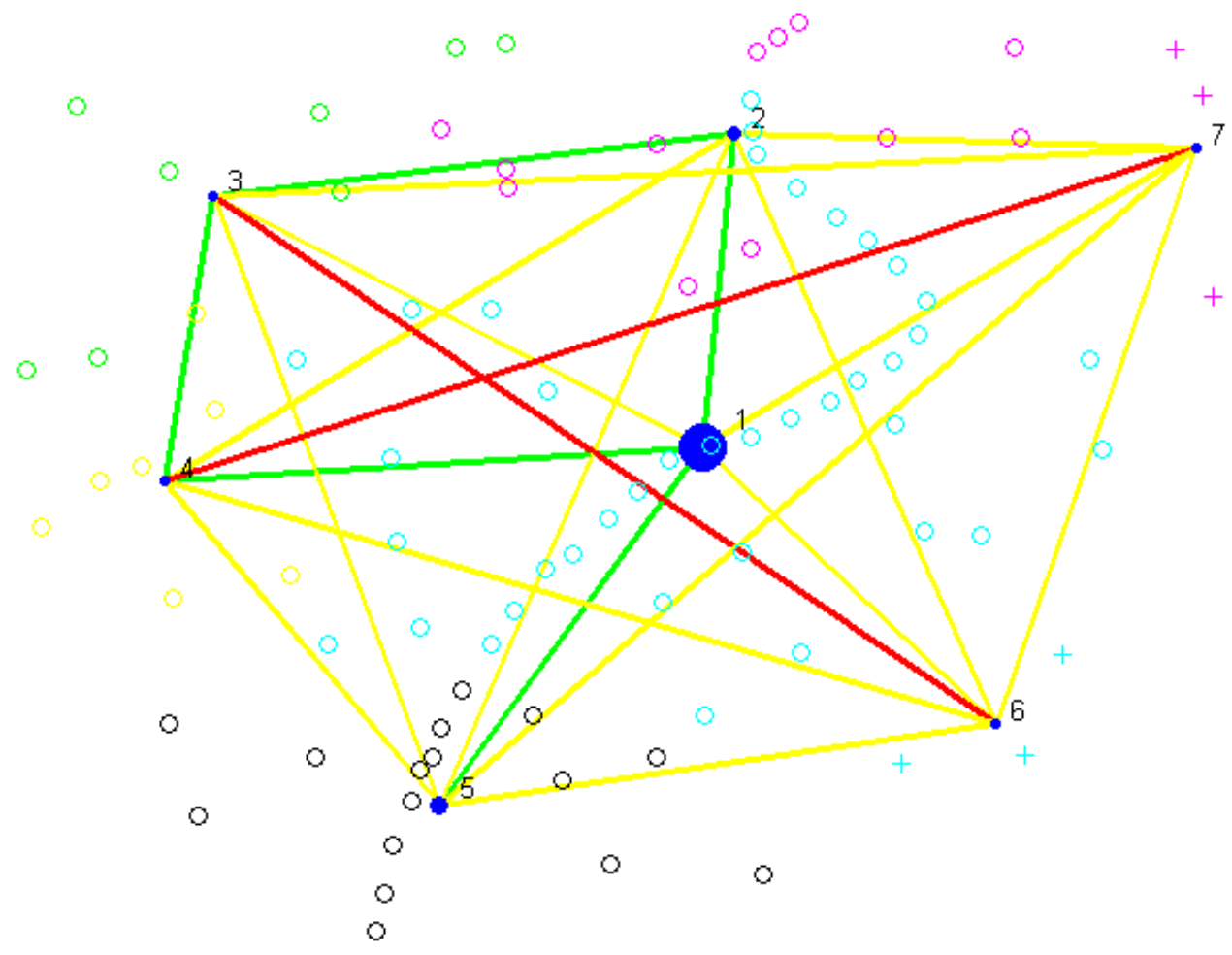
In general, there exists no metrical 2D-space that supports the geometrical interpretation of the fuzzy network considered.

The traffic light symbolization

Initial network, number of nodes is 88
green > 0.9 red < 0.4



hypernodes
green > 0.9 red < 0.4



Interaction: Hyper nodes and hyper links can be eliminated and the resulting graph further analysed.

ACKNOWLEDGEMENTS

The FFI researcher Stein Nilsen has proposed a method to explain fuzzy hyper networks on the basis of spatial relations in a 2-dimensional metrical space.

Researcher Joanne Treurniet, DRDC Ottawa, has contributed to improved efficiency of the Matlab-implementation of the hyper-network algorithm. This improvement is highly acknowledged in interactive manipulations of the network