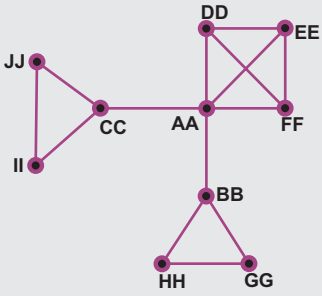


Step I: conceptualizing the network model

Network layout



Export data table from graph visualization tools*

Network data table

*Vertices		10		
Nodes	1	"AA"	0.5138	0.5138
	2	"BB"	0.5135	0.6195
	3	"CC"	0.3754	0.5152
	4	"DD"	0.5152	0.4158
	5	"EE"	0.6128	0.4141
	6	"FF"	0.6128	0.5135
	7	"GG"	0.5690	0.7003
	8	"HH"	0.4562	0.7020
	9	"II"	0.2912	0.5825
	10	"JJ"	0.2929	0.4562
*Edges				
	1	2	Coordinates (X,Y)	Links
	1	3		
	1	4		
	1	5		
	1	6		
	2	2		
	2	8		
	3	9		
	3	10		
	4	5		
	4	6		
	5	6		
	7	8		
	9	10		

*Pajek or Medusa format.

Step II: analyzing the network model with ViaComplex

Input 1: array data table

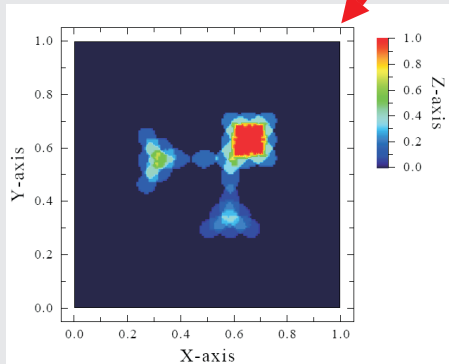
Probe_ID	Gene_ID	Signal
1_at	AA	75.00
2_at	BB	25.00
3_at	CC	50.00
4_at	DD	75.00
5_at	EE	75.00
6_at	FF	75.00
7_at	GG	25.00
8_at	HH	25.00
9_at	II	50.00
10_at	JJ	50.00

ViaComplex projects gene expression values (i.e. the array signal) onto network coordinates and the results are plotted as X,Y,Z landscapes. So, to project the data the software matches Gene_ID and Node_ID. If there is more than one probe interrogating the expression of a given gene, then the software takes the average of the expression values. Only in this circumstance the probe tag ID is used, that is, to indicate whether or not a gene is duplicated in the array. Therefore, the software is able to parse any probe tag ID, since it does not involve transversal comparisons between network and array.

Input 2*: network data table

*Vertices		10		
	1	"AA"	0.5138	0.5138
	2	"BB"	0.5135	0.6195
	3	"CC"	0.3754	0.5152
	4	"DD"	0.5152	0.4158
	5	"EE"	0.6128	0.4141
	6	"FF"	0.6128	0.5135
	7	"GG"	0.5690	0.7003
	8	"HH"	0.4562	0.7020
	9	"II"	0.2912	0.5825
	10	"JJ"	0.2929	0.4562
*Edges				
	1	2	Coordinates (X,Y)	Links
	1	3		
	1	4		
	1	5		
	1	6		
	2	2		
	2	8		
	3	9		
	3	10		
	4	5		
	4	6		
	5	6		
	7	8		
	9	10		

Results: (X,Y,Z) maps



The landscape is generated by ViaComplex V1.0 with the following options: plot as "3D-Graph", build on "edge&node", resolution "level-50", contrast "level-40", smoothness "level-30" and zoom "level-90".

*Using ViaComplex "Custom Model" module.