

Dynamic modelisation of transcriptional regulatory networks involved in yeast antifungal resistance

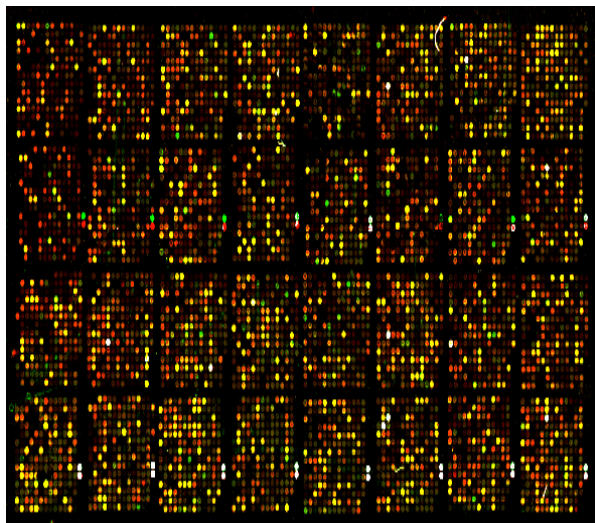
Jennifer Becq¹, Gaëlle Lelandais¹,
Sophie Lèbre² & Frédéric Devaux³

¹DSIMB, ²LSiIT, ³LGM

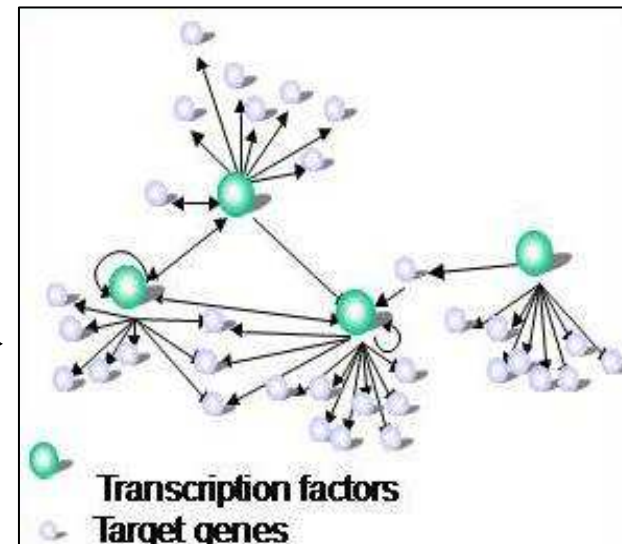
Poster 9

Challenging questions for functional genomic

- Which genes are expressed in response to environmental changes?
- How interactions between genes can lead to complex cellular processes?



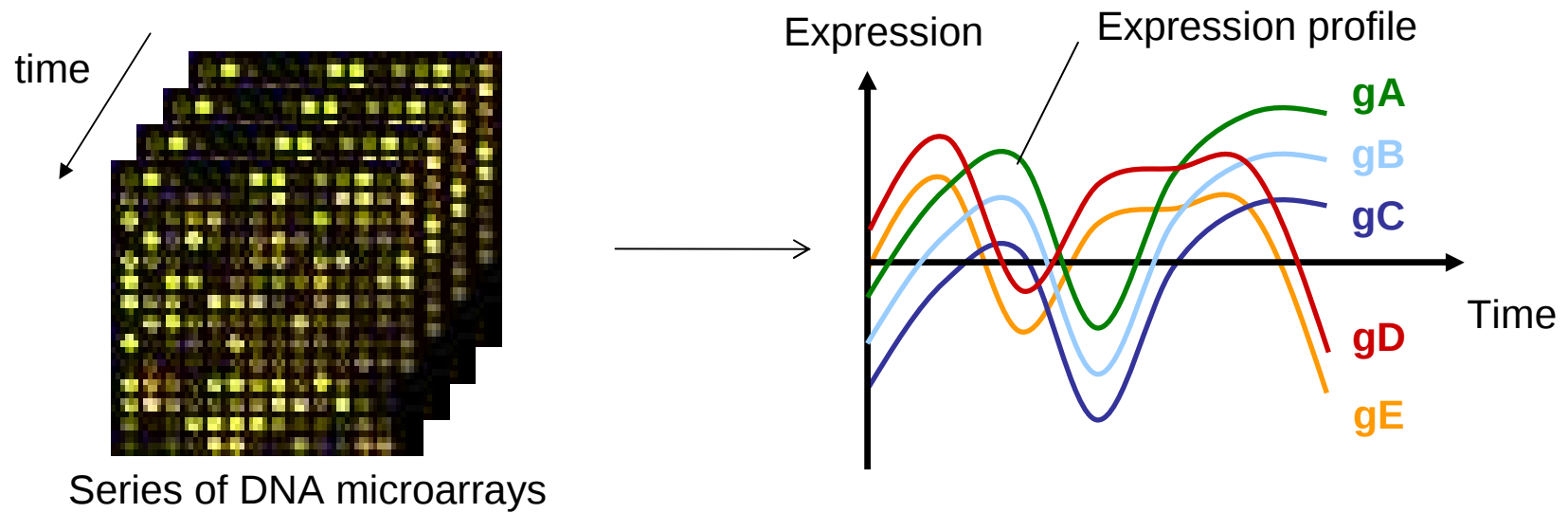
Microarray



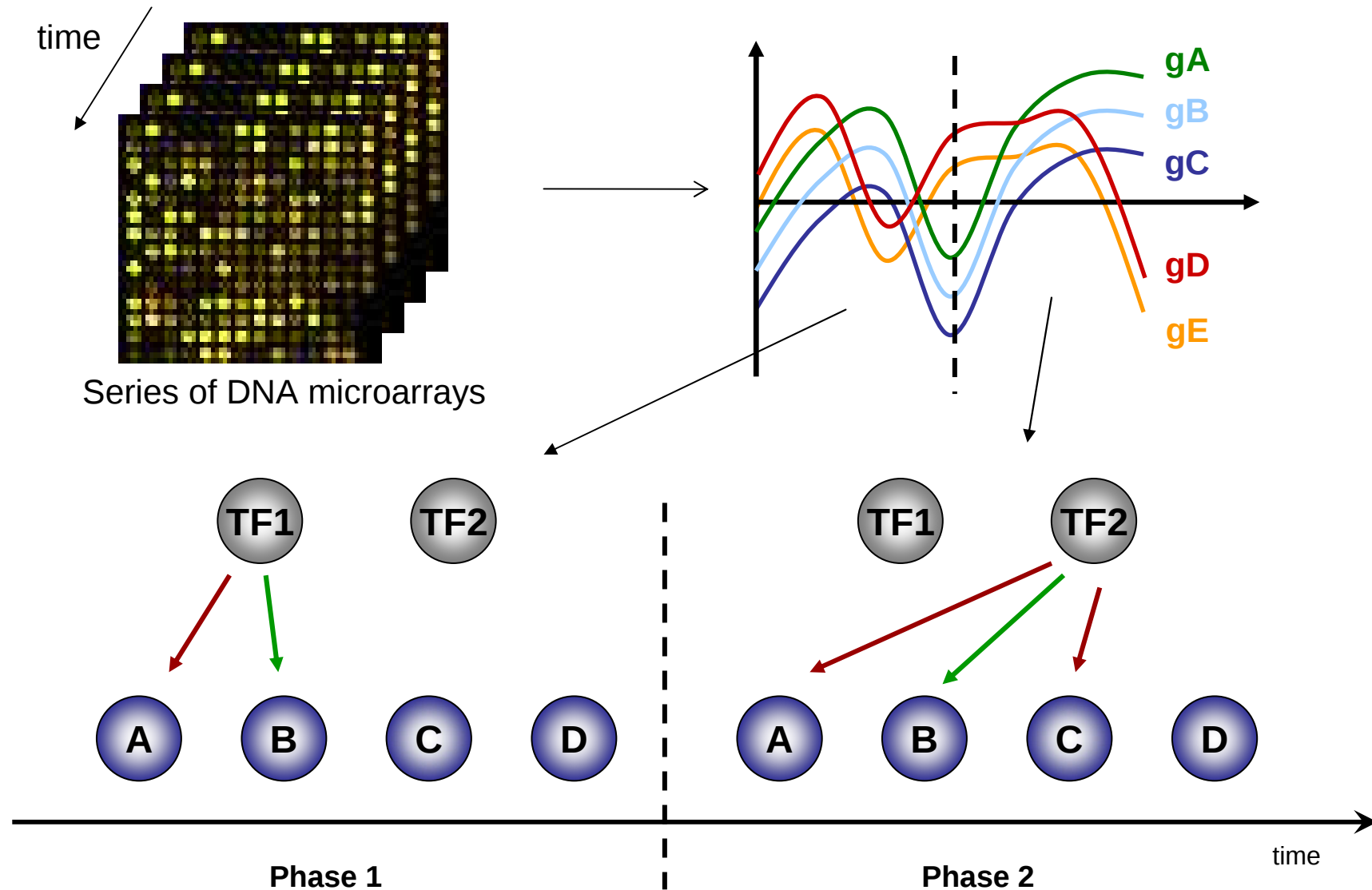
Regulatory network

- Describing the complete structure of a network
- Understanding the dynamic functioning of a network

What is a dynamic network?

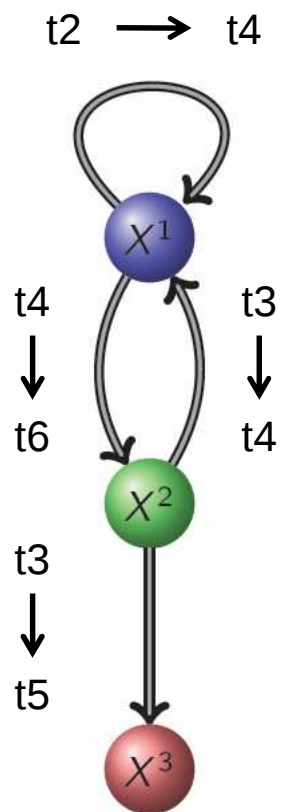


What is a dynamic network?

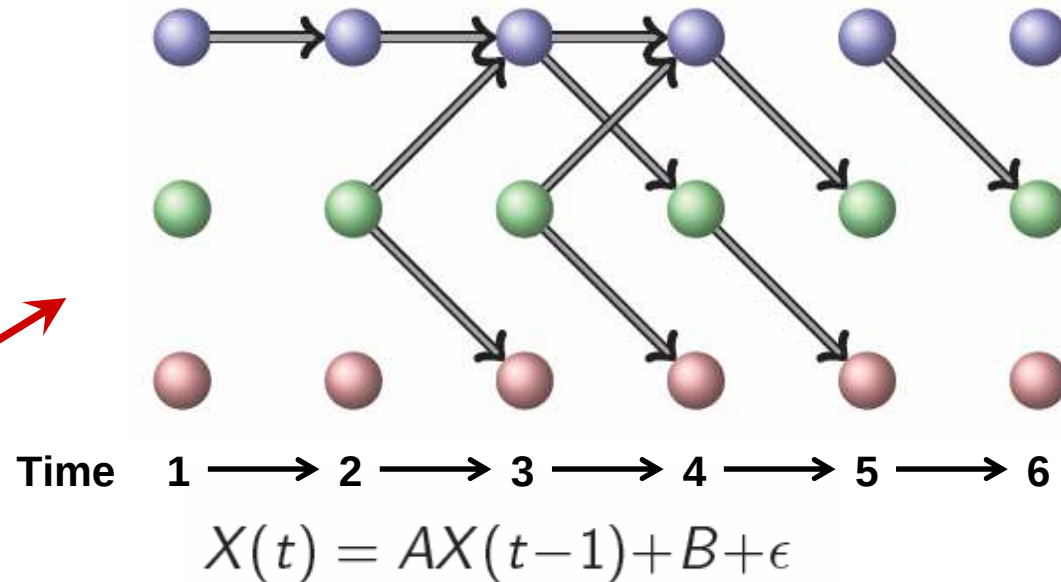


The *time-varying Dynamical Bayesian Networks* (tvDBN) algorithm

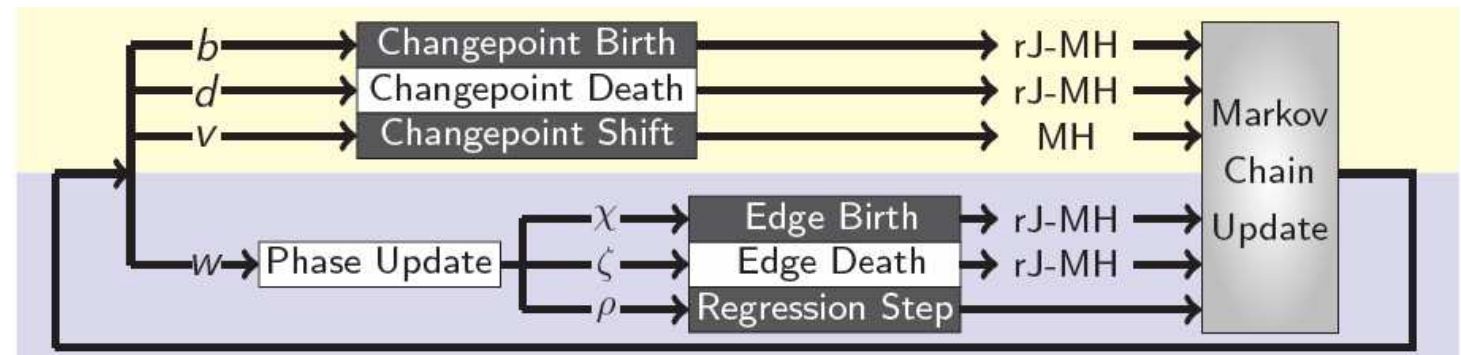
Regulatory motif
between genes



dynamic bayesian network

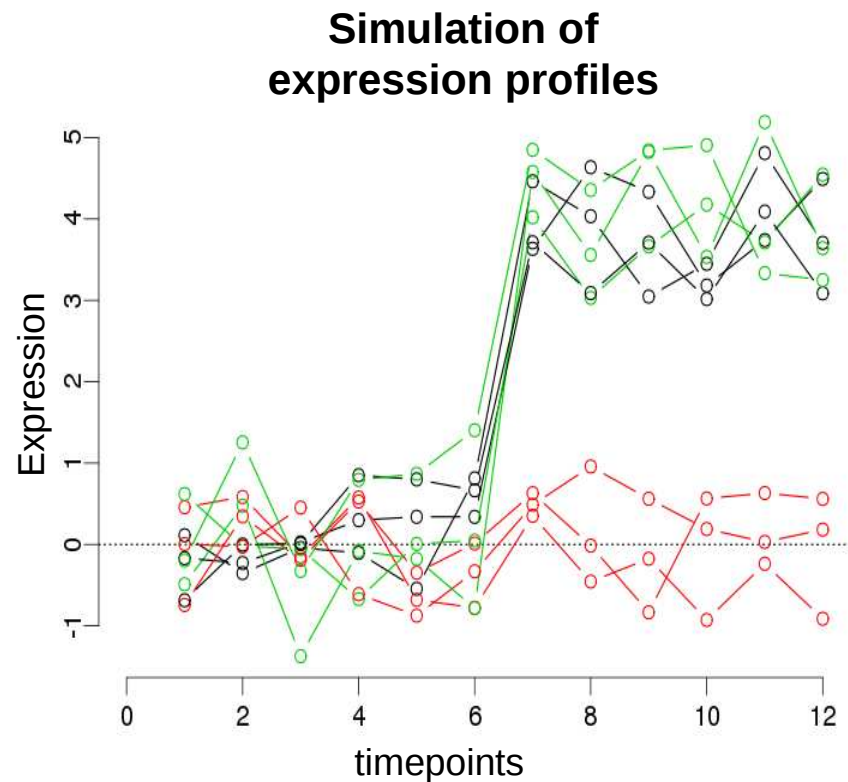


rw-MCMC algorithm

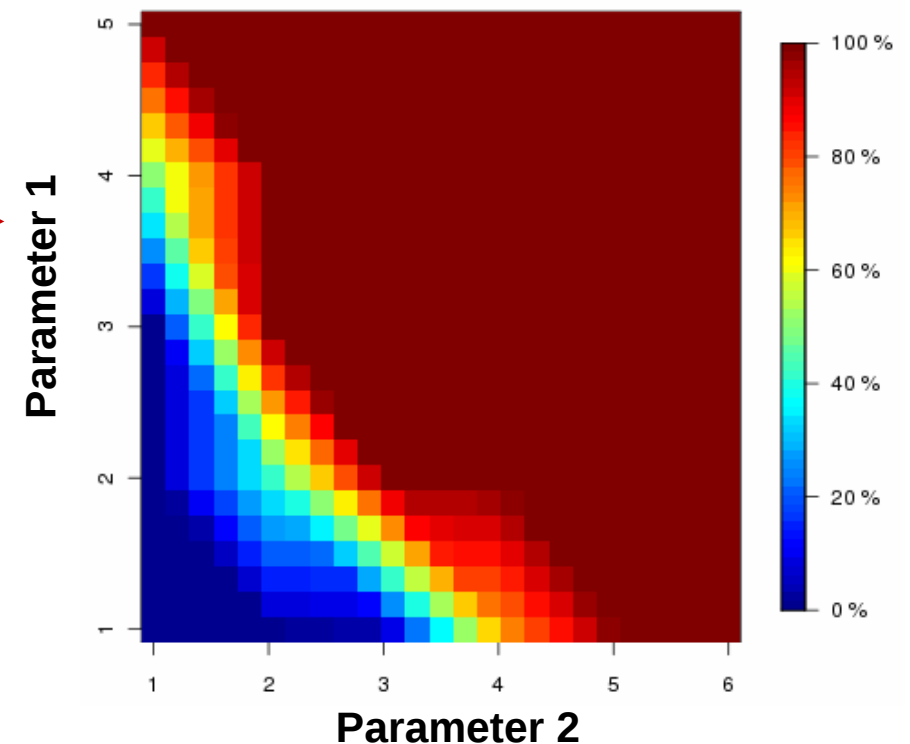


Evaluation of tvDBN

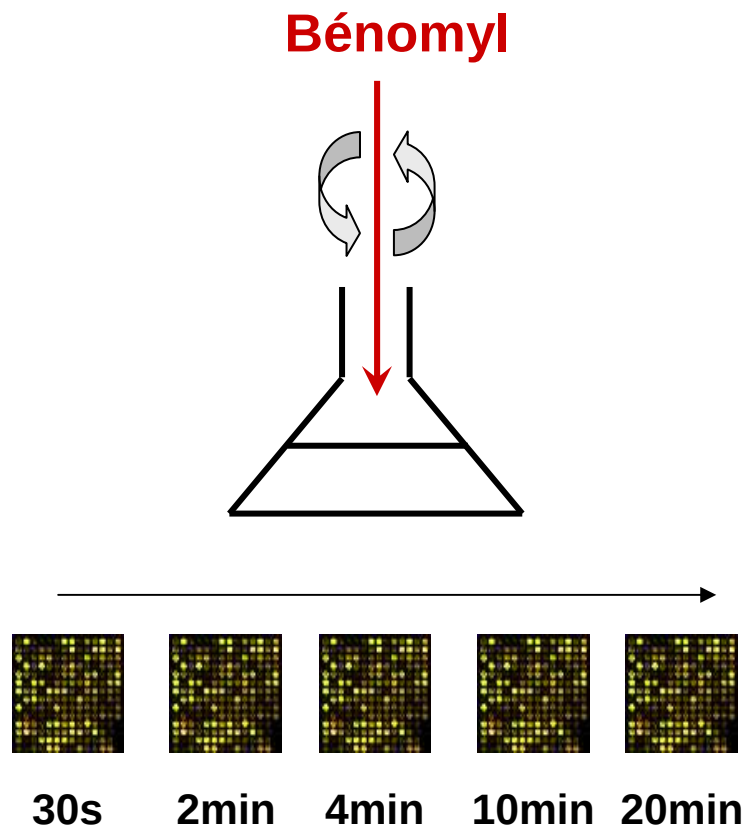
- In which experimental conditions is the algorithm valid?
- To what extent can one interpret the results?



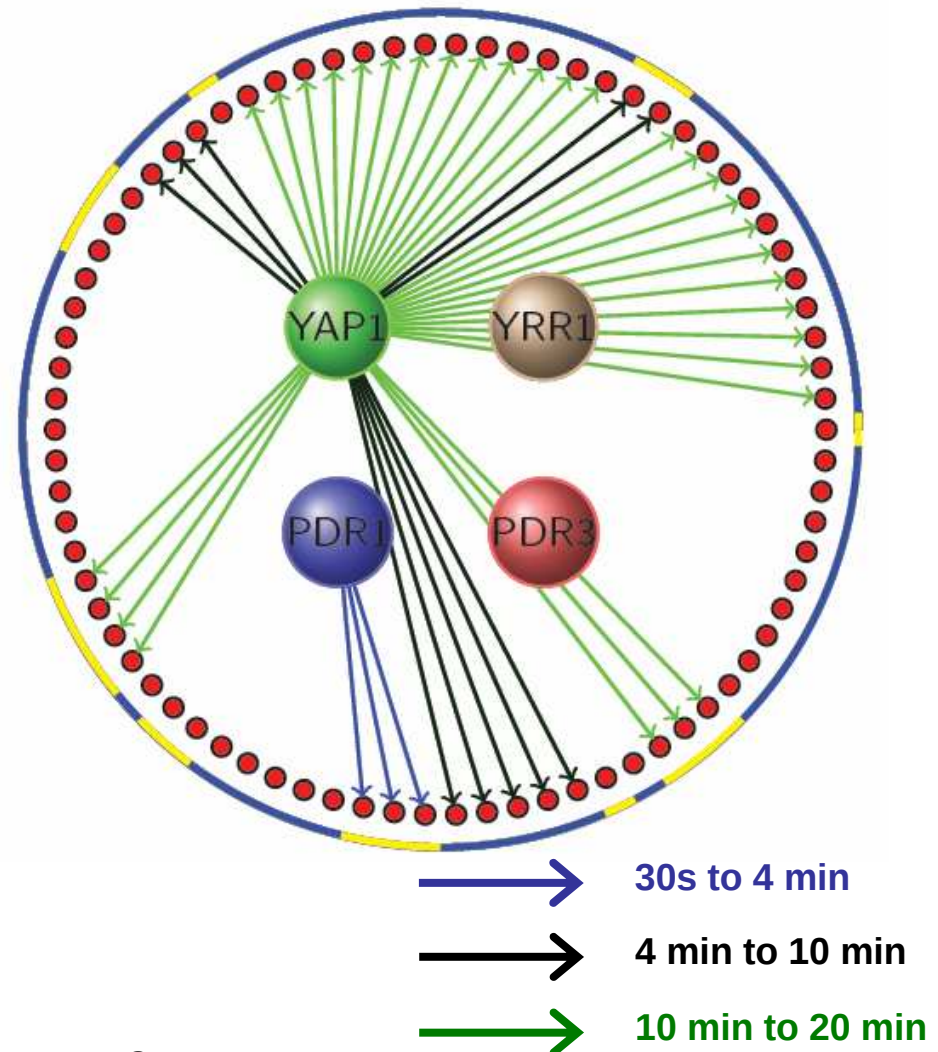
**Performance of tvDBN
according to parameters
(% of networks correctly described)**



Application: yeast response to benomyl stress



tvDBN global results



**Dynamic modelisation of
transcriptional regulatory networks
involved in yeast antifungal resistance**

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jennifer.becq@univ-paris-diderot.fr