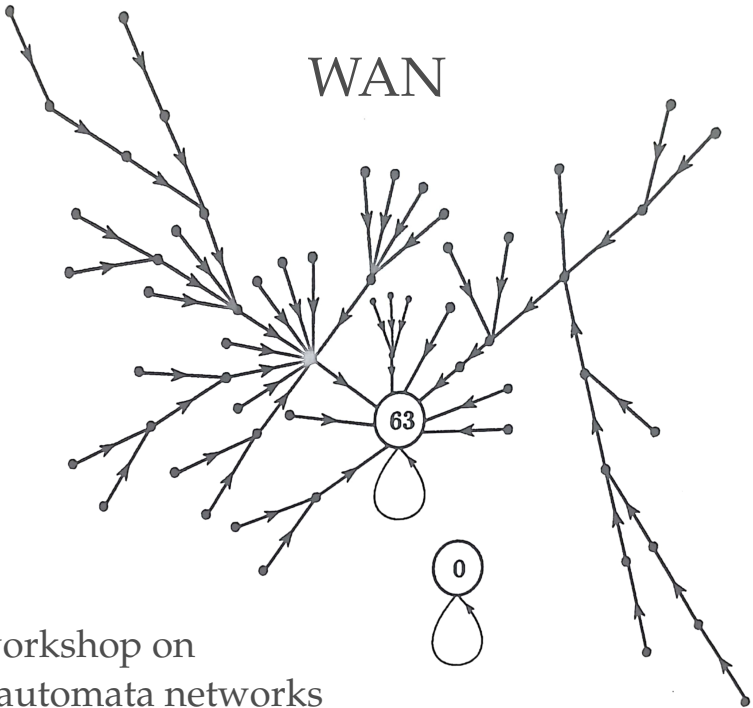


WAN



a workshop on
automata networks

Automata networks

- ▶ Automata viewed as “computational blackboxes”

$$i \in V$$

- ▶ States

$$x_i \in X_i \subseteq \mathbb{Z}$$

- ▶ Configurations

$$x \in X = \prod_{i \in V} X_i$$

- ▶ Automata networks

$$f: \begin{array}{l} X \rightarrow X \\ x \mapsto (f_i(x))_{i \in V} \end{array}$$

is an automata network where

$$f_i: \begin{array}{l} X \rightarrow X_i \\ x \mapsto x_i \end{array} \text{ is the local function of } i$$

A family crisis

An example dedicated to François Robert

- ▶ People at stake
 - ▶ Alice: girlfriend of Bob
 - ▶ Bob: boyfriend of Alice
 - ▶ Charlize: mother of Bob

Alice

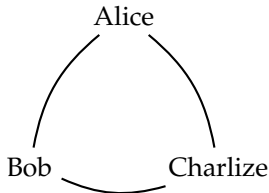
Bob

Charlize

A family crisis

An example dedicated to François Robert

- ▶ People at stake: let's assume the stereotype
 - ▶ Alice: girlfriend of Bob — Alice loves Bob
 - ▶ Bob: boyfriend of Alice — Bob loves Alice and deeply likes his mother
 - ▶ Charlize: mother of Bob — Charlize loves his son but doesn't appreciate Alice



A family crisis

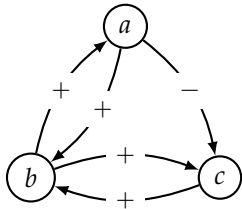
An example dedicated to François Robert

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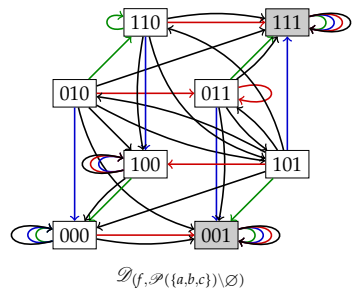
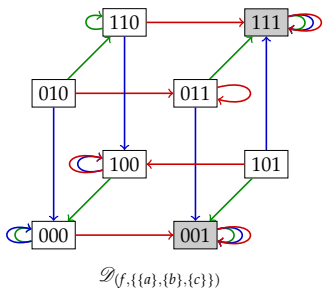
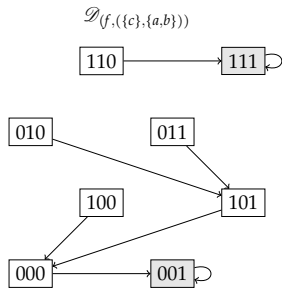
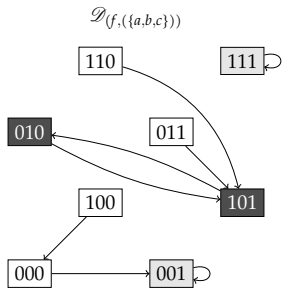
- ▶ A semantic based on happiness
 - ▶ a is happy when b is
 - ▶ b is happy when both a and c are
 - ▶ c is happy when b is or when a is not

- ▶ A formalisation

$$f(x) = \begin{cases} f_a(x) = x_b \\ f_b(x) = x_a \wedge x_c \\ f_c(x) = \neg x_a \vee x_b \end{cases}$$



Possible dynamics among other



Classical questions

Dynamics

Combinatorics

Complexity and
computability

Structural sensitivity

Modelling

Schedule

wed. 14

thu. 15

fri. 16

sat. 17

09:15 M. Gadouleau	P. Guillon	09:30 E. Tonello	09:30 Working session
Break	10:00 F. Bridoux	B. Mossé	
10:45 L. Paulevé, S. Sené	Break	Break	
A. Picard Marchetto, A. Richard	S. Chevalier	11:15 G. Gamard	11:30 Restitution
P. Perrotin	S. Ivanov		
12:30 Lunch	12:30 Lunch	12:30 Lunch	12:30 Picnic
WAN Introduction	14:00 Working session	14:00 Working session	
S. Riva			
A. E. Porreca			
15:30 M. Macauley			
16:15 Break	Break	Break	
J. Demongeot	16:30 J. G. T. Zañudo	16:30 A. Richard	
17:30 E. Goles	M. Ríos Wilson	J. Aracena	
M. Tchuente	L. Salinas	K. Perrot	
M. Morvan			
S. Rica			
19:30 Special dinner	19:30 Dinner	19:30 Dinner	

Dynamics

Simulations

Algebra

E. Goles' session

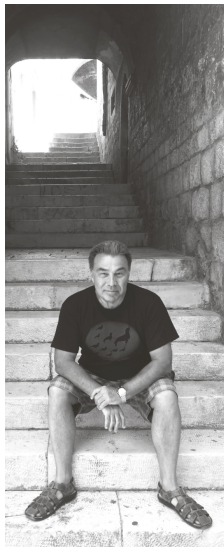
Modelling

Complexity

Working sessions
(onsite)

About Eric Goles' special session

- ▶ 2021 is the year of Eric's 70th birthday
(Eric will be 70 at the end of August)
- ▶ **Unfortunately absent!**
- ▶ His special link with France (since more than 40 years)
 - ▶ PhD in Grenoble, under François Robert, in 1980
 - ▶ Recruited CNRS Researcher in 1981
 - ▶ "Doctorat d'État" in Grenoble 1985
 - ▶ Come back to Chile in the 1980's
 - ▶ Construction of the CMM, a CNRS international laboratory
- ▶ Organisation
 - ▶ **Eric's talk**, intertwined with
 - ▶ **Four tributes from some of his friends** (and colleagues):
J. Demongeot, M. Tchuente, M. Morvan, and S. Rica



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About working sessions

- ▶ WAN is a workshop, so let's work together!
- ▶ 3 sessions, all onsite:
 - ▶ Tomorrow after lunch until 16:00
 - ▶ Friday after lunch until 16:00
 - ▶ Saturday morning until the end of WAN
- ▶ Four pre-imagined thematics
 - ▶ On **combinatorics and dynamics**
 - ▶ On **complexity**
 - ▶ On **updating modes**
 - ▶ On **modelling**
- ▶ **But feel free to propose other ones!**
→ before the dinner
- ▶ Tomorrow morning: associate your firstname to the thematics you want to discuss and work on

About global organisation

- ▶ About meals
 - ▶ Lunches at 12:30
 - ▶ Dinners at 19:30
- ▶ For all, WAN is an hybrid event
 - ▶ All the talks will take place in Auditorium 1
 - ▶ They will also be followed online through BigBlueButton
 - ▶ The (only onsite) working sessions will take place where you want (Auditorium 1, outside)
- ▶ For speakers
 - ▶ It would be great if you sent your presentations (in pdf please) to the organising committee the day before your talk at this address:
automata-wan-2021@liste.lis-lab.fr.
 - ▶ If you can't, upload your presentation during the break which precedes your talk



Natural Computing

An International Journal

- ▶ A proposition from NaCo: editing a special issue related to this week collecting a selection of
 - ▶ articles (with substantial extensions or improvements) from regulatory and exploratory papers accepted to AUTOMATA
 - ▶ articles emerging from WAN presentations / discussions
 - ▶ and other contributions from the community
- ▶ Submission deadline (in discussion)
 - ▶ the end of March 2022
- ▶ Expected publication date
 - ▶ before the end of 2022

Many thanks to our sponsors



Last but not least

