Autômatos Celulares na simulação da variação populacional de moluscos do gênero Biomphalaria glabrata no litoral de Pernambuco

Dalton F. Araújo, André C. A. Firmo,Vitor A. K. de Almeida, Jones O. Albuquerque

Depto de Estatística e Informática, UFRPE. 52171-900, Rua Dom Manuel de Medeiros S/N, Recife, PE

Constança C. G. S. Barbosa

Fundação Oswaldo Cruz, Centro de Pesquisas Aggeu Magalhães, Departamento de Parasitologia.

50670-420, Av. Moraes Rego s/n Cidade Universitária, Recife, PE

E-mail: daltonaraujo@xiscanoe.org, caetanofirmo@xiscanoe.org, vitorkessler@xiscanoe.org, joa@deinfo.ufrpe.br, cbarbosa@cpqam.fiocruz.br

AUTÔMATOS CELULARES

$Y_{c_{i,j}, c_{k,l}}$ represents an **interaction coefficient** that controls all possible interactions between a cell Ci,j and its global neighborhood Gi,j.

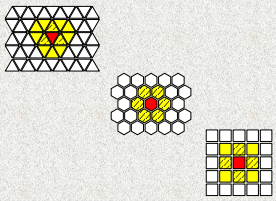
A function of **inter-cell distance** and **cell population density**.

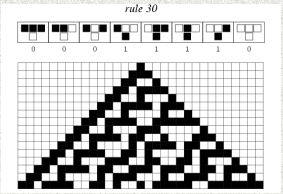
Definition of a Fuzzy Set

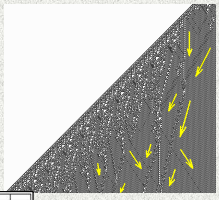
Neighborhood of cell Ci,j is global SCA

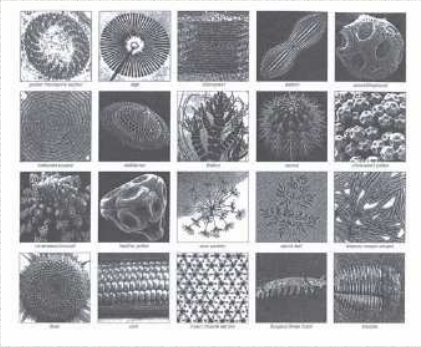
$$G_{i,j} := \{(C_{k,l}, Y_{c_{i,j}, c_{k,l}}) \mid \text{for all } C_{k,l} \in C,\ 0 \le Y_{c_{i,j}, c_{k,l}} \le 1\}$$

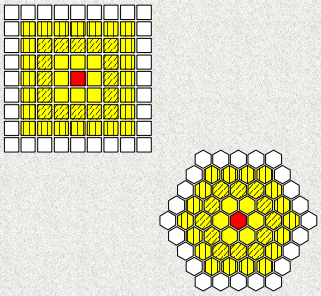
C is a set of all cells in the CA.

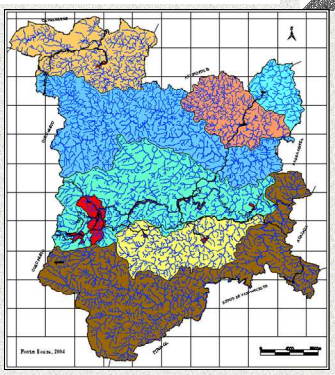












Mapa de Bacias Hidrográficas

- **Bacia do Rio Piracicaba**
- **Bacia do Rio Gualaxo do Norte**
- **Sub-bacia do Córrego Águas Claras**
- **Sub-bacia dos Córregos Boa Vista/ Paciência**
- **Bacia do Ribeirão do Carmo**
- **Bacia do Rio Gualaxo do Sul**
- **Sub-bacia do Ribeirão Cachoeira do Brumado**

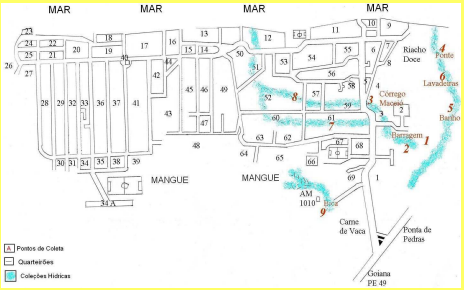
Patterns of some seashells, like the ones in *Conus* and *Cymbiola* genus, are generated by natural CA.

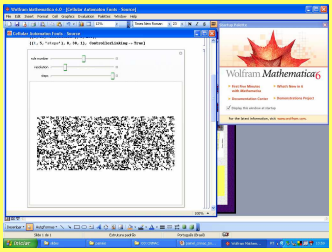
MODELO (SITUAÇÃO ATUAL)

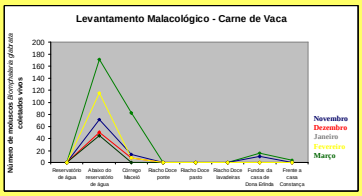
Probabilidade de Movimento x Taxa de Infecção Vetorial

- Probabilidade de Movimento
  - Indica a saída de hospedeiros da sua célula para uma célula próxima.
- Taxa de Infecção Vetorial
  - Transmissão do vírus através das células.

$$P_{vectored} = \frac{susceptibl\ e_population}{neighbourh\ ood_capacity} \times P_{input}$$







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