

Universalité et complexité des automates cellulaires coagulants

Universality and complexity of freezing cellular automata

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Intuition and Examples

A behavior is “Freezing” if its state only “decreases” or “follows one direction”.

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Forest Fire

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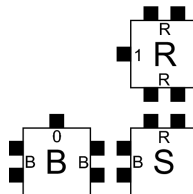
Forest Fire
tree \rightarrow fire \rightarrow ash

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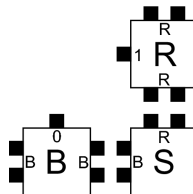
Self-assembly tilings.

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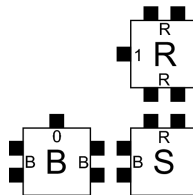
Self-assembly tilings.
empty \rightarrow tile 1, tile 2, ..., tile n

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Self-assembly tilings.
empty \rightarrow tile 1, tile 2, ..., tile n

Blocks

Block 0

Block

Blocks

Block 0

Block

Block 1

block

Blocks

Block 0

Block

Block 1

block

Block 2

block

Remplazando blocks

Block 0

Block

Remplazando blocks

Block 0

Block

Block 1

block

Remplazando blocks

Block 3

Block nuevo

Block 1

block

Block 2

block

Block 0

Block^a

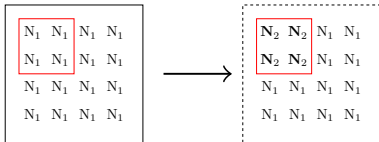
^aF. Becker, D. Maldonado, N. Ollinger, and G. Theyssier. “Universality in Freezing Cellular Automata”. In: *Sailing Routes in the World of Computation - 14th Conference on Computability in Europe, CiE 2018, Kiel, Germany, July 30 - August 3, 2018, Proceedings*. Edited by F. Manea, R. G. Miller, and D. Nowotka. Cham: Springer International Publishing, 2018, pages 50–59.

N_1	N_1	N_1	N_1
N_1	N_1	N_1	N_1
N_1	N_1	N_1	N_1
N_1	N_1	N_1	N_1

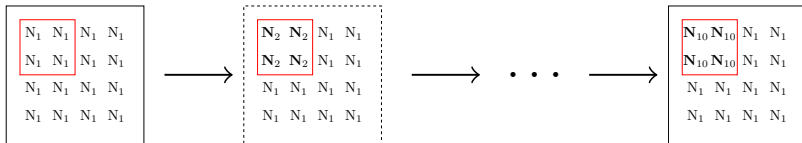
block algo importante

N_1	N_1	N_1	N_1
N_1	N_1	N_1	N_1
N_1	N_1	N_1	N_1
N_1	N_1	N_1	N_1

block algo importante



block algo importante



block **algo importante**



F. Becker, D. Maldonado, N. Ollinger, and G. Theyssier. “Universality in Freezing Cellular Automata”. In: *Sailing Routes in the World of Computation - 14th Conference on Computability in Europe, CiE 2018, Kiel, Germany, July 30 - August 3, 2018, Proceedings*. Edited by F. Manea, R. G. Miller, and D. Nowotka. Cham: Springer International Publishing, 2018, pages 50–59.

¡Muchas Gracias!