



**AGH UNIVERSITY OF SCIENCE
AND TECHNOLOGY**

Multiscale Modelling

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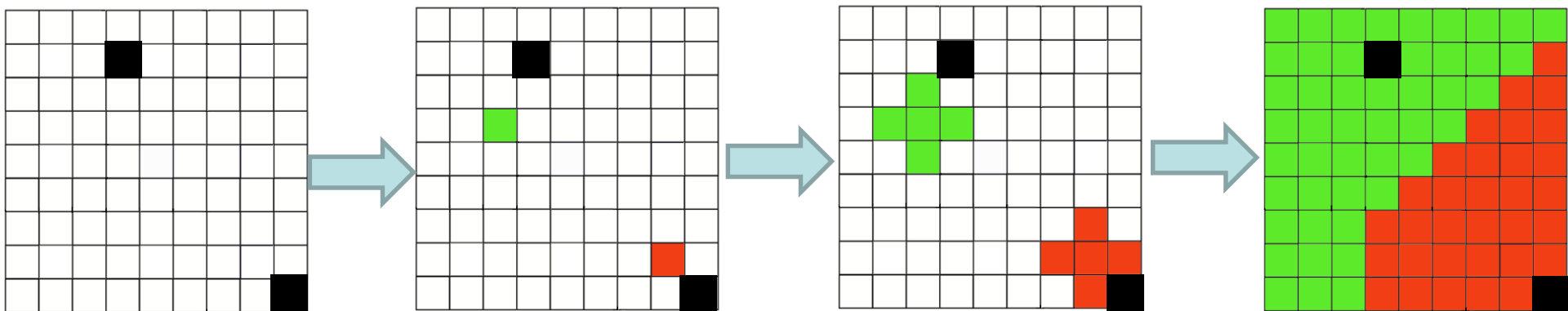
Issues	
1	Organizational class - simple grain growth CA + visualization
2	Microstructures export/import to/from txt files, pictures.
3	Modification of cellular automata grain growth algorithm-inclusions (at the beginning/end of the simulation)
4	Modification of CA grain growth algorithm - influence of grain curvature
5	Modification of CA grain growth algorithm - substructures CA
6	Modification of CA grain growth algorithm - boundaries coloring
7	Reports 1st part
8	Monte Carlo grain growth algorithm
9	Modification of MC grain growth algorithm - substructures CA, MC
10	MC static recrystallization algorithm - energy distribution
11	MC static recrystallization algorithm - nucleation
12	MC static recrystallization algorithm - growth
13	Reports 2nd part
14	Final degree



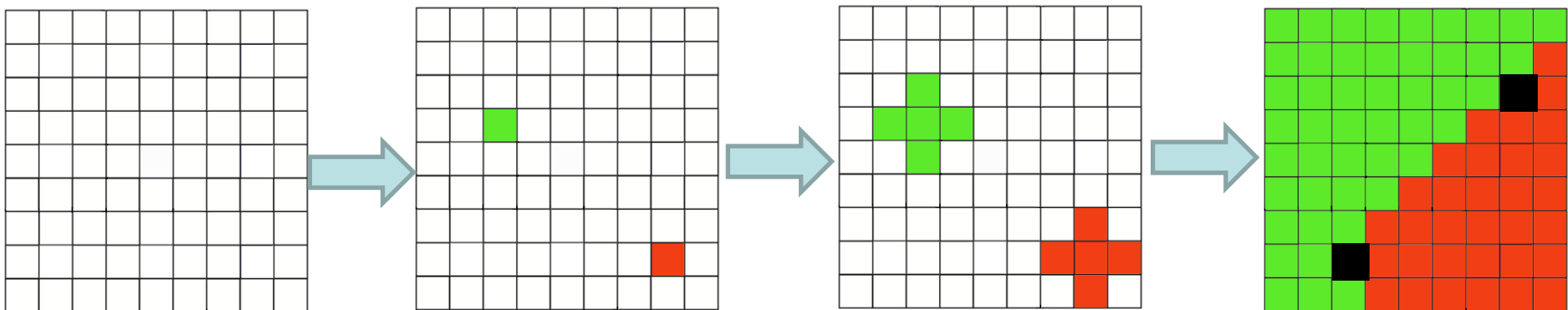
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Inclusions

1. At the beginning of simulation (square *diagonal* d and circle with *radius* r).



2. After simulation (square with *diagonal* d and circle with *radius* r).



Initial space

1st step

2nd step

last step

Before Grain Growth

Form1

Choose dimension x of space

Choose dimension y of space

Choose amount of grains

Amount of inclusions

Size of inclusions

Type of inclusion

Choose boundary condition

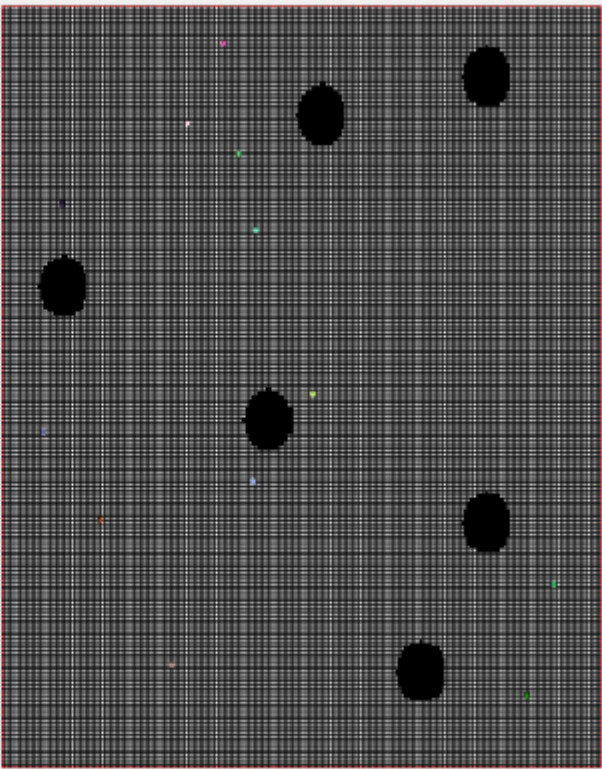
Choose a neighborhood

Amount grains to delete

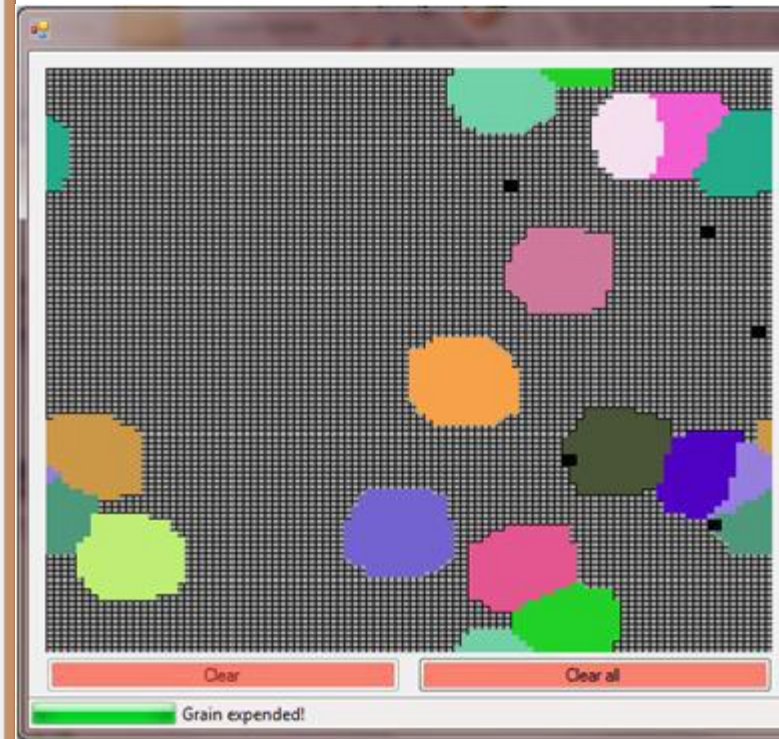
Substructure

Amount of states

Amount of MC steps



circle (*radius r*)



square (*diagonal d*)

