



**AGH UNIVERSITY OF SCIENCE  
AND TECHNOLOGY**



# **Efficient Monte Carlo static recrystallization model designed for the Grid Platform.**

**Mateusz Sitko [msitko@agh.edu.pl](mailto:msitko@agh.edu.pl)  
Łukasz Madej [lmadej@agh.edu.pl](mailto:lmadej@agh.edu.pl)**

**AGH University of Science and Technology  
Department of Applied Computer Science and Modelling**

**Kraków 05.11.13**

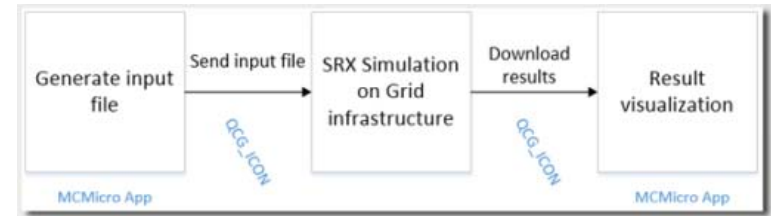
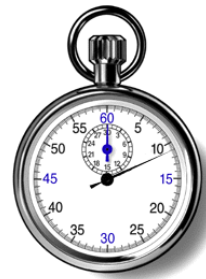


# Monte Carlo Static Recrystallization



The MC approach is successfully applied in many scientific fields such as mathematics, physics or biology. Recently, this method is also more intensively used to simulate processes and phenomena occurring in metallic materials during deformation.

Parallelized version of the static recrystallization algorithm working within the PLGrid environment.



The major problem of this method is long computation time.

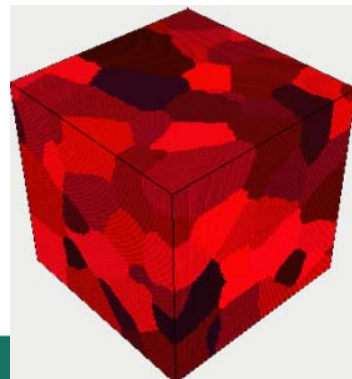
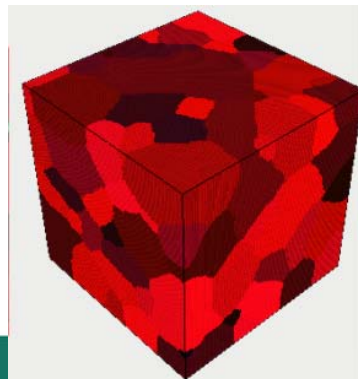


Moore

Hexagonal

Pentagonal

Von Neumann



Neighborhood selection:



"Przedstawione prace są realizowane w ramach projektu PLGrid Plus, który jest współfinansowany ze środków Europejskiego Funduszu Rozwoju Regionalnego w ramach Programu Operacyjnego Innowacyjna Gospodarka."