

College of Science and UHC Thesis Mixer

Malgo Peszynska

Mathematics

Kidder 292a

541-737-9847

mpesz@math.oregonstate.edu



Applied and computational mathematics.
Analysis; Algorithms; Modeling; Data.

Applications: Geosciences; (Alternative)
Energy; Materials; Environment.

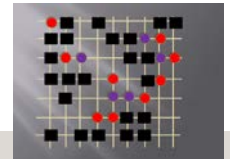
<http://www.math.oregonstate.edu/~mpesz/students.htm>

1

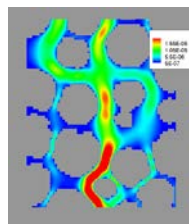
Conflicts *in Silicio*

(in computational modeling)

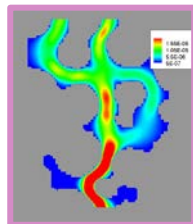
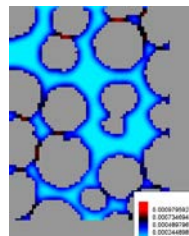
- Data: experiment vs reconstruction
- Computing: accuracy vs Efficiency
- Modeling:
 - graphs vs functions
 - reaction vs diffusion
 - linear vs nonlinear
 - discrete or continuum



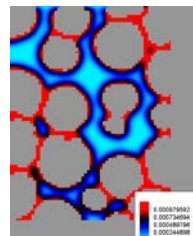
Ex.: Multiple scales and phases



12h

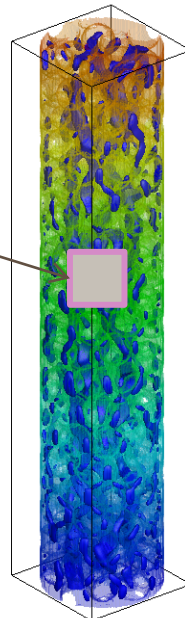


22h



Flow

Biofilm
phase



Thesis topics and opportunities

- “Differential Equations with Graphs”
- “Phase transitions: ice-cream or latte?”
- “Modeling diffusion and aggregation”
- “Network modeling”
- ...

NSF-DMS grant 2015-2018

“Phase transitions across the scales”