

Digital Rock Physics

Geo-CT Meeting

20. April 2015

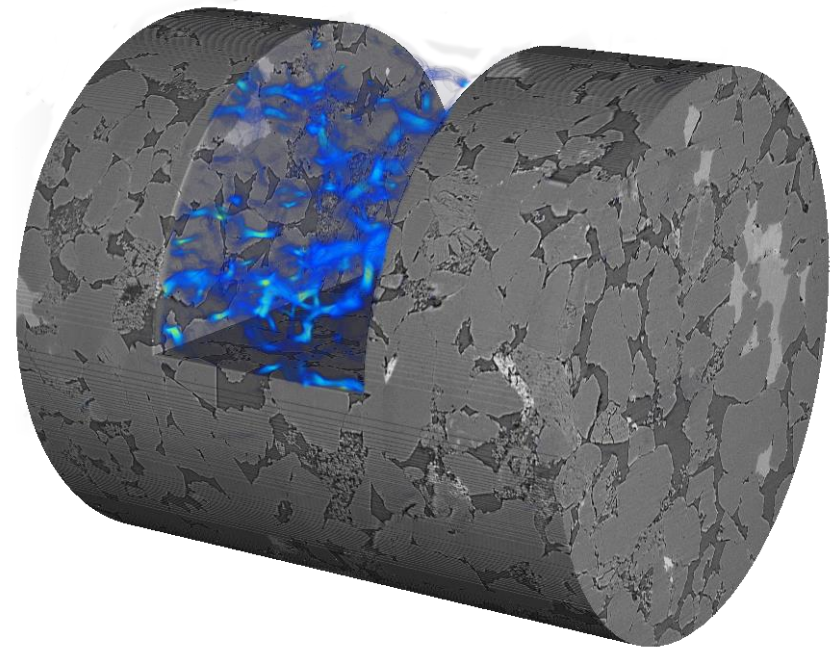
Sven Linden

Tom Cvjetkovic

Erik Glatt

Jens-Oliver Schwarz

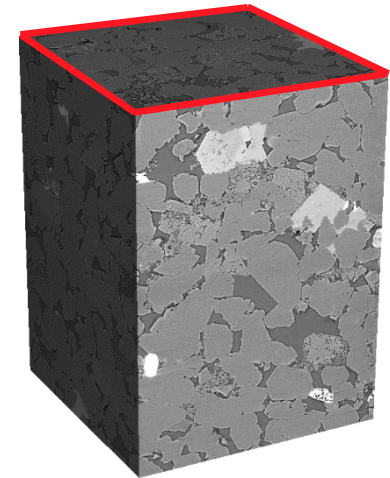
Andreas Wiegmann



Detailed In-situ DRP workflow I



- Cropping
- Noise reduction
- Artifact reduction¹



Sampling

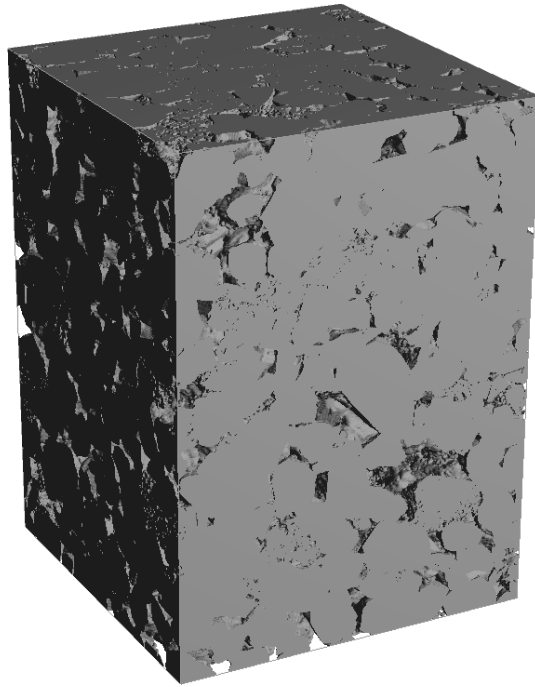
Imaging

Processing

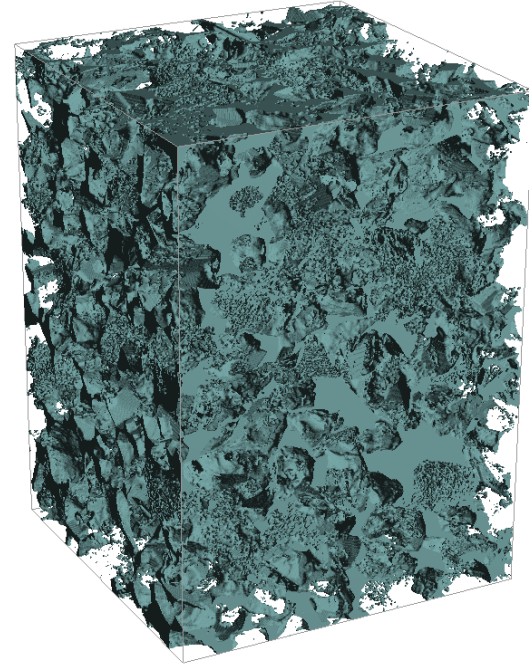
Detailed In-situ DRP workflow II

Multi-stage watershed algorithm¹

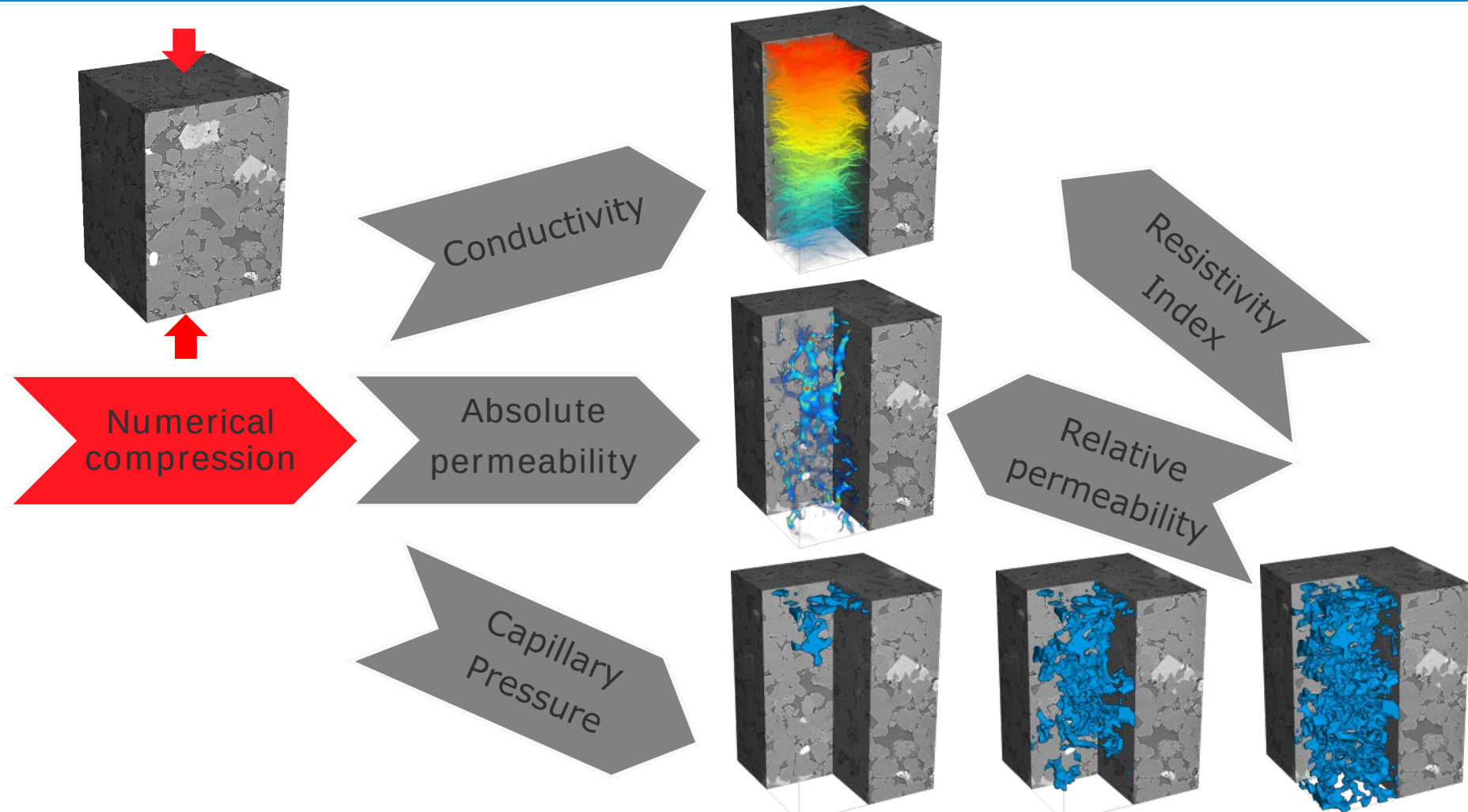
Solids



Pore space



Segmentation



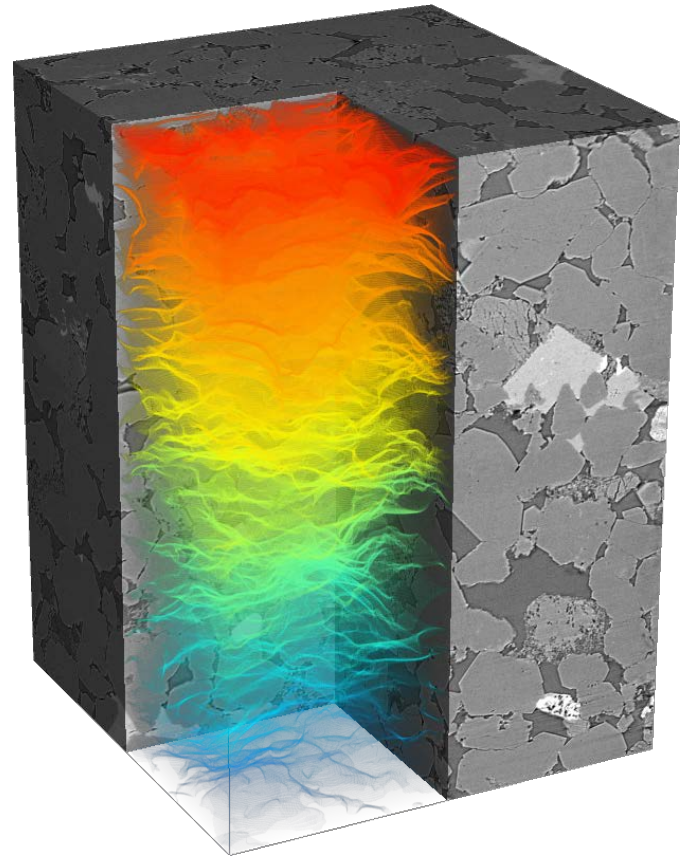
Comparison lab versus DRP

Lab measurement



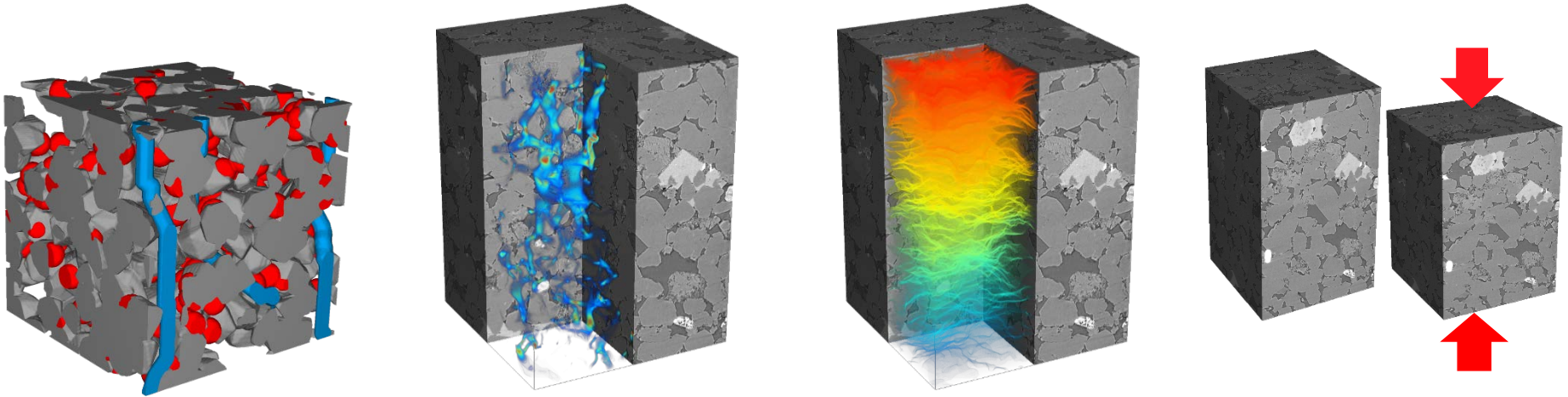
Image courtesy of M. Halisch (LIAG)

DRP simulation



Math2Market

Digital Rock Physics Portfolio



Geometrical parameters

- Porosity
- Pore size distribution
- Percolation
- Surface area
- Tortuosity

Flow parameters

- Absolute permeability
- Relative permeability
- Multi-scale flow
- Capillary pressure curve

Electrical parameters

- Formation factor
- Resistivity index
- Saturation exponent
- Cementation exponent

Mechanical parameters

- Elastic moduli
- Stiffness
- In-Situ conditions

Thank you for your attention!

