LIETUVOS ENERGETIKOS INSTITUTAS

Transport Characteristics of Granular Matter on a Forward Acting Grate

COST Action MP1305 Flowing Matter
Instituto Para A Investigação Interdisciplinar,
Universidade De Lisboa
Avenida Professor Gama Pinto, 2
1649-003 Lisb, Lisbon, Portugal

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Bernhard Peters & Algis Džiugys

Objectives

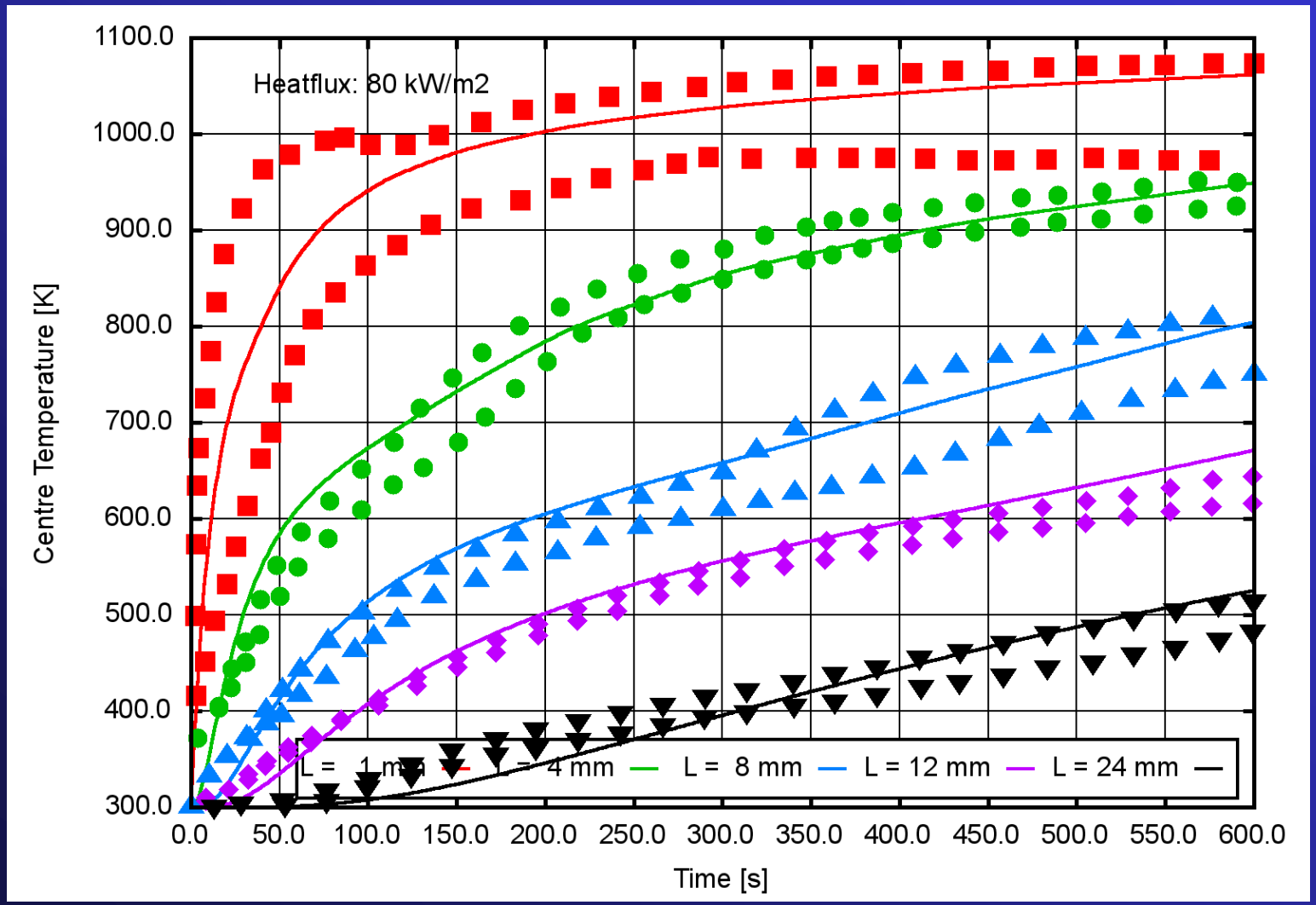
- Bridging meso- to macro-scale
- Detailed resolution of meso-scale with its results transformed to macro-scale
- Scaling results of micro-scale to meso-scale

XDEM

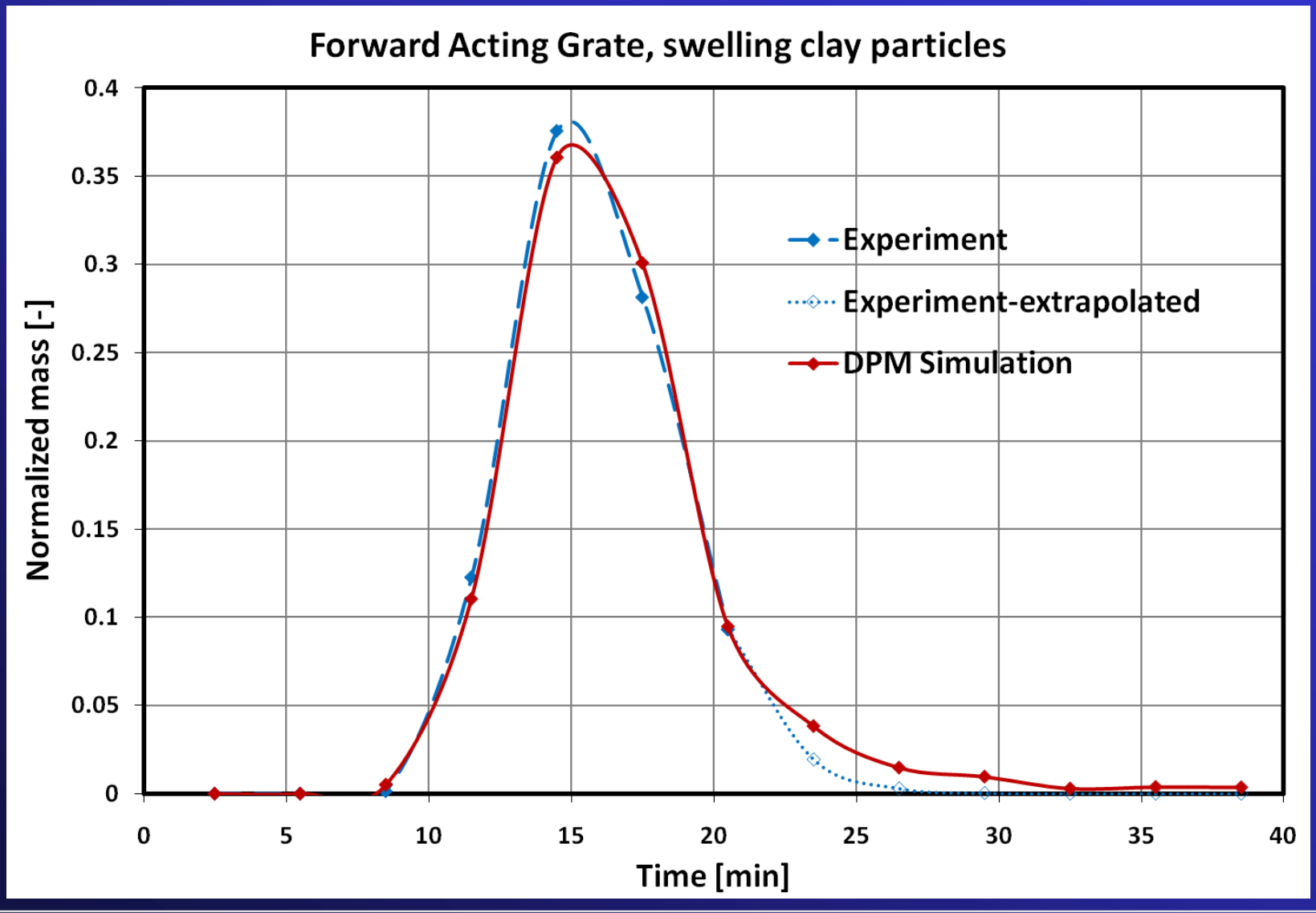
Extended Discrete Element Method:

- based on the classical Discrete Element Method (DEM) to describe motion of granular materials (discrete phase)
- extended by
  - thermodynamics for particles
  - an interface to Computational Fluid Dynamics (CFD) and Finite Element Analysis (FEA)
- Coupling to external commercial/OpenSource software

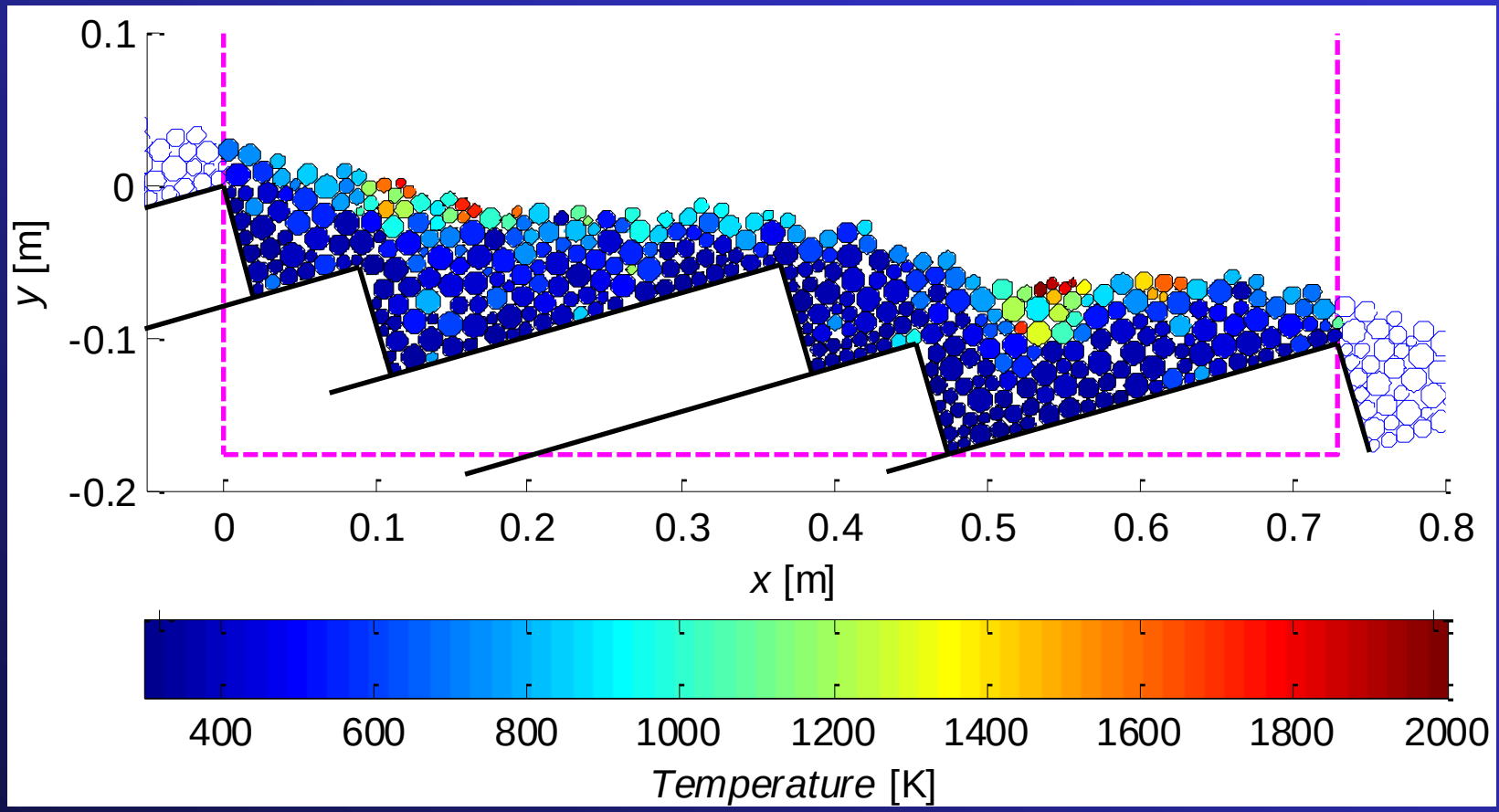
Temperature Distribution



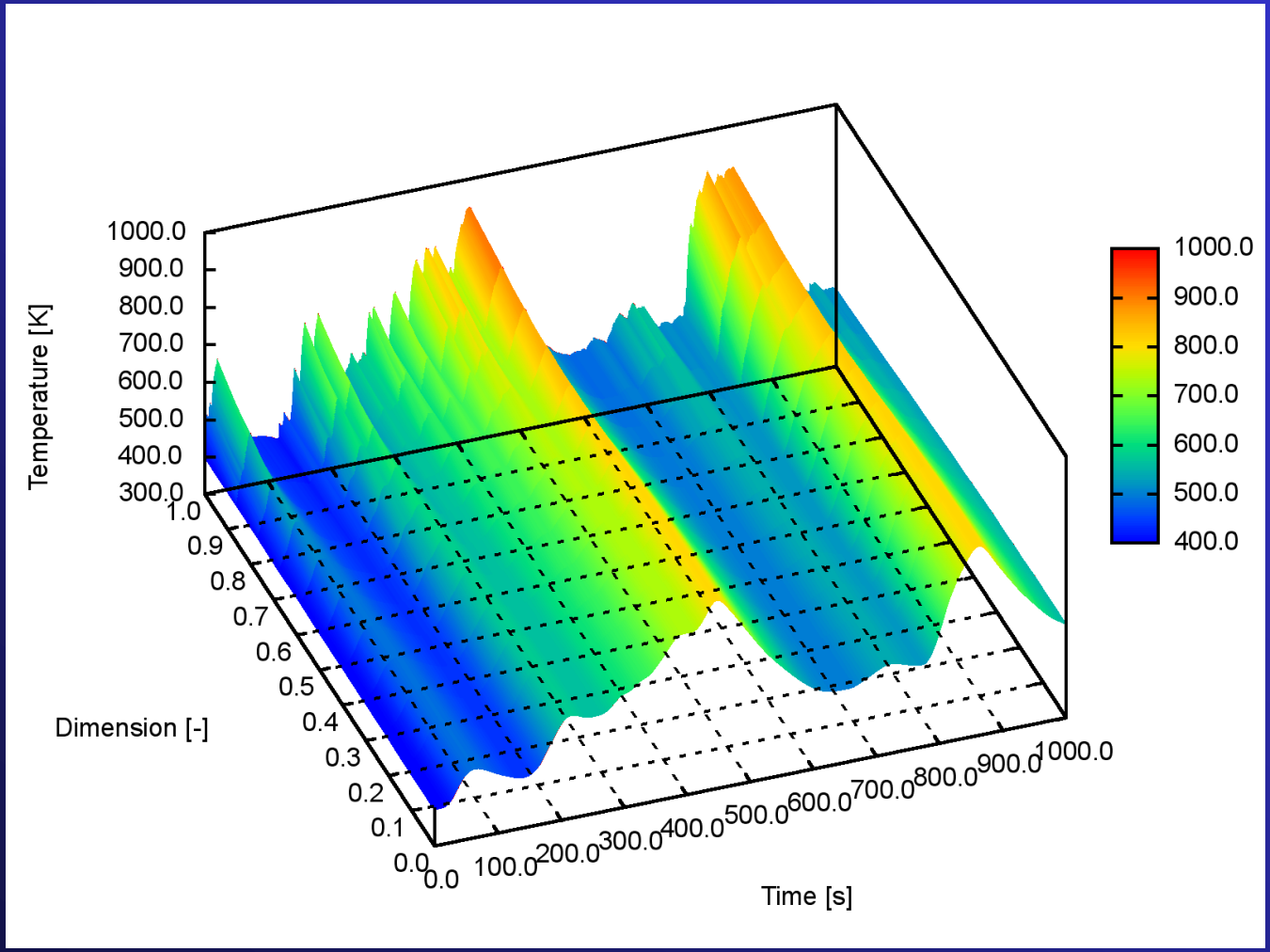
Transport Characteristics



Packed Bed Temperature



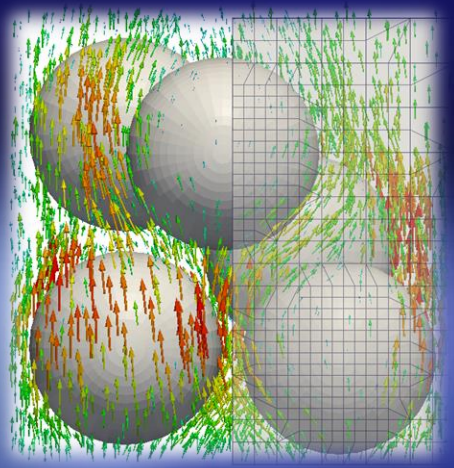
Particle Temperature



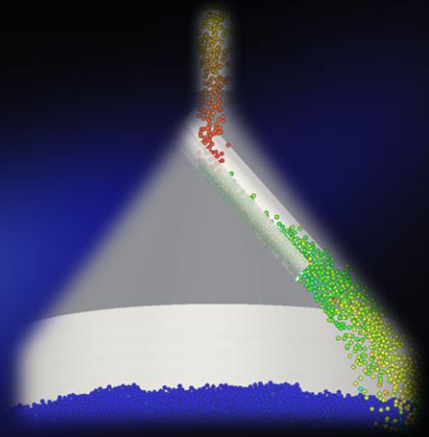
Drying of a Moving Bed

Summary

- Description of particulate phase under thermal and mechanical load
- High resolution of discrete and continuous phases
- Significant reduction of empirical correlations
- Broad application spectra with a high potential for adaptation and extension



www.xdem.de



Thank you very much for your attention