

DEM5 Conference Programme

Wednesday 25 th August 2010	
08.00	Late Registration and Coffee Late Registration Desk is opened 08.00-18.00
08.20	OPENING LECTURE: From Nanoscience to Astrophysics-Towards Discrete Populations Based Virtual Experimentation A. Munjiza Room A
08.50	PLENARY LECTURE: Multi-core Strategies for particle methods John R. Williams, David Holmes and Peter Tilke Room A
	Room A
	Room B
	ALGORITHMS AND SOLVERS – PART 1 Session Chair: G. G. Schiava D’Albano
	PARALLELISATION, GPU, OPTIMISATION Session Chair: Tomas Lukas
09.20	MRCK_3D Contact Detection Algorithm E. Rougier and A. Munjiza
	Parallelization of an Open-Source FEM/DEM Code Y2D Tomas Lukas, Antonio Munjiza
09.40	Polyhedra on the Cheap Mark A. Hopkins
	Wet-Mixing of Powders, a Large-Scale GPU Implementation Radeke, A.C., Khinast, J.G.
10.00	An Event Driven Element Modelling Approach Y. T. Feng, K. Han and D. R. J. Owen
	Grid Parallel Computing System for Calibration of DEM Material Models Elson Mourao, David Curry, Richard LaRoche
10.20	Development of a Rotational Resistance Model in the Discrete Element Method Yoshinori Yamada, Mikio Sakai, Masao Tsuchiya and Shuichi Hirayama
	A GPU Accelerated Continuous-Based Discrete Element Method for Elastodynamics Analysis Zhaosong Ma, Chun Feng, Tianping Liu, Shihai Li
10.40	Description of Rotation in the Movable Cellular Automaton Method Aleksy Yu. Smolin, Nikita V. Roman, Serguei G. Psakhie
	Large Scale GPGPU Implementation of the Discrete Element Method Applied to Modelling the Environment in the Positron Emission Particle Tracking Experiment Marius Hromnik, Indresan Govender
11.00	A Bounding Box Search Algorithm for DEM Simulation Laura E. Walizer and John F. Peters
	Calibration of DEM Material Models Using Optimisation Method in a Grid Parallel System David Curry, Elson Mourao, Richard LaRoche
	GRANULAR MATERIALS, POWDERS AND NANOPOWDERS – PART 1 Session Chair: Tomas Lukas
11.20	A Spring System Equivalent to Continuum Model Shihai Li, Yanan Zhang, Chun Feng
	The 3D Splash Behavior for the Impacting of One Particle on a Particulate Packing Mao Xing, Chuanyu Wu, Michael J. Adams
11.40	Resolving the Indeterminacy of Vertex-Vertex Contact in the 2D Discontinuous Deformation Analysis Zhiye Zhao, Huirong Bao
	Fast and Stable Simulation of Granular Matter and Machines Claude Lacoursière, Martin Servin, and Anders Backman

12.00	Lunch	
13.00	KEYNOTE LECTURE: DEM Validation – a Simple Problem Colin Thornton, Sharen Cummins, Paul Cleary	
	ALGORITHMS AND SOLVERS – PART 2 Session Chair: G. G. Schiava D’Albano	GRANULAR MATERIALS, POWDERS AND NANOPOWDERS – PART 2 Session Chair: Tomas Lukas
13.40	LIGGGHTS – a New Open Source Discrete Element Simulation Software Christoph Kloss, and Christoph Goniva	Evolution of Structure in Granular Materials John F. Peters, David A. Horner, Laura E. Walizer, Raju Kala
	VERIFICATION AND VALIDATION – PART 1 Session Chair: G. G. Schiava D’Albano	
14.00	Simulating and Optimizing of a Ball Mill by Comparison between Numerical Discrete Element Method (DEM) and Experimental Method B. Arabzadeh, V. Hasanzadeh, A. Farzanegan	DEM Simulation of Ball Indentation on Cohesive Powders Massih Pasha, Ali Hassanpour, Mojtaba Ghadiri
14.20	Numerical and Experimental Investigation of Progressive Development of a Granular Pile of Binary Size Pellets Yao wei Yu and Henrik Saxén	Statistics of Internal Structure of a Granular Pile Generated by the Particle Expansion Method Chi-Yan Lo, Malcolm Bolton, Yi-Pik Cheng
14.40	Particle Shape Effects in Medical Syringe Needles – Experiments and Simulations for Polymer Microparticle Injection Mark Whitaker, Paul Langston, Steve Howdle, Barry Azzopardi	Simulating Granular Material Behaviour to General Loading Paths with DEM Xia Li, Hai-Sui Yu
15.00	Experimental Validation of Polyhedral Discrete Element Model Stuart Mack, Paul Langston, Colin Webb, Trevor York	Enhanced Vibrational Granular Mixing J. E. Hilton and P. W. Cleary
15.20	Tee and coffee	
	VERIFICATION AND VALIDATION – PART 2 Session Chair: G. G. Schiava D’Albano	GRANULAR MATERIALS, POWDERS AND NANOPOWDERS – PART 3 Session Chair: Tomas Lukas
15.40	Modelling the Trajectory of 3D Sensor-Shapes in Discharging Hoppers Filled with Monosized and Binary Mixtures: an Experimental and DEM Comparison Stuart Mack, Paul Langston, Colin Webb, Trevor York	Discrete Element Modelling of Cylindrical Cavity Expansion of Granular Materials Yan Geng, Hai-Sui Yu, Glenn McDowell
16.00	Comparing Experimental Measurements of Mill Lifter Deflections with 2D and 3D DEM Predictions Johanna Alatalo, Bertil I. Pålsson, Kent Tano	Effect of Gradation on the Constant Volume Cyclic Behaviour of Granular Media Abbas Soroush, Behrooz Ferdowsi

16.20	Numerical Analysis of Cold-Formed Sigma Steel Beams Qiang Liu, Jian Yang and Long Yuan Li	Applying DEM to Understanding Jamming in Systems of Non-Spherical Grains Gary W. Delaney, Paul W. Cleary and Anish A. Bhuta
	FRACTURE AND FRAGMENTATION, CRACKS Session Chair: G. G. Schiava D'Albano	
16.40	Development of Discrete Element Method for Simulation of Deformation and Fracture of Heterogeneous Elastoplastic Materials Sergey G. Psakhie, Evgeny V. Shilko, Alexey Yu. Smolin, Sergey V. Astafurov, Artem Yu. Panchenko	Combining DEM and 3D Imaging of Real Granular Systems Gary W. Delaney, T. Di Matteo and Tomaso Aste
17.00	Fracture Behaviour of Highly Porous Ceramics Xiao-xing Liu and Christophe L. Martin	Discrete Element Modelling of Compaction Behaviour of Agglomerated and Aggregated Nanopowder Avinash Balakrishnan, Patrick Pizette and Christophe L. Martin
17.20	Numerical Strategy for Discrete Fine Cracking Description with Continuous Model Arnaud Delaplace, Benjamin Richard, Cécile Oliver, Frédéric Ragueneau	Agglomeration Dynamics of Magnetic Nanoparticles in Simple Shear Flow Eldin Wee Chuan Lim
17.40	Implementation of 6-Node Element in DFEM for Quasi-Brittle Materials Xu Chunhui, Li Mingrui, Yuan Li	Modelling Non-Spherical Particle Breakage in DEM Simulations Gary W. Delaney, Paul W. Cleary, Matt D. Sinnott and Rob D. Morrison
18.00	Rock Impact Modelling Using FEM/DEM Andrea Lisjak, Giovanni Grasselli	
18.20	Implementation of a rock joint shear strength criterion inside a combined finite-discrete element method (FEM/DEM) code Omid K. Mahabadi, Giovanni Grasselli	
18.40		
19.30 - 23.30	Conference Banquet	

Thursday 26th August 2010

	Late Registration Desk is opened 08.00-12.00	
08.00	KEYNOTE LECTURE: Industrial Case Studies in Mixing, Comminution, Chutes and Screens P. W. Cleary	
	SOILS, ICE, ROCK, LANDSLIDES, EARTHQUAKES – PART 1 Session Chair: G. G. Schiava D’Albano	COUPLED SOLUTIONS – PART 1 Session Chair: Tomas Lukas
08.40	Coupled DEM-LBM Simulation Of a Soil Fluidisation Problem Xilin Cui, Jun Li, Andrew H.C. Chan, David N. Chapman	Discrete Thermal Element Modelling of Heat Conduction in Spherical Particle Systems Y. T. Feng, C. F. Li, K. Han, D.R.J. Owen
09.00	Fold Development in Compressed Multi-Layers Modelled with FEMDEM John-Paul Latham, Jiansheng Xiang and Adrian Shelley	Implementation of Combined Single and Smeared Crack Model in 3D Combined Finite-Discrete Element Analysis Zhou Lei, Mengyan Zang, Antonio Munjiza
09.20	Discrete Modelling of Geomaterials Under Extreme Loading T. Tran, P. Marin, L. Scholtes, F.-V. Donzé	Modelling of Reacting Discrete Particles in Continuous Fluid Flow: an Energy Technology Perspective H. Kruggel-Emden, S. Wirtz, V. Scherer, A. Munjiza
09.40	Modelling the Effect of Narrow Blade Geometry on Soil Failure and Draught Force Using Discrete Element Method Gholamhossein Shahgoli, Naser Shahi, Wiria Soltanpoor, Corne J. Coetzee	Implementation of Tangential Force in 3D Discrete Element and Combined Finite-Discrete Element Methods Jiansheng Xiang, John-Paul Latham, Ante Munjiza
10.00	The Application of the Hybrid Stress Blasting Model to Improving the Understanding of Wall Control Blasting Ewan J. Sellers	Development of Virtual Geoscience Simulation Tools, VGeST Using the Combined Finite Discrete Element Method, FEMDEM John-Paul Latham, Jiansheng Xiang, Antonio Munjiza
10.20	Discrete Element Simulation of Rock Cutting with Evaluation of Tool Wear Jerzy Rojek, Carlos Labra, Eugenio Oñate	Coupled Gas-Particulate Discharge from Bucket Elevators Matt Sinnott, James Hilton, William McBride and Paul Cleary
10.40	Modelling Punch-Through Tests with 2D FEM-DEM Arttu Polojärvi and Jukka Tuhkuri	Large Scale Discrete Element Modelling of Fine Particles in a Fluidized Bed M. Sakai, Y. Yamada, Y. Shigeto, K. Shibata, S. Koshizuka
11.00	Combined Finite Discrete Element Simulations of a Floating Ice Sheet Failing Against an Inclined Structure Jani Paavilainen, Jukka Tuhkuri and Arttu Polojärvi	A Preliminary Study on Modelling Liquid-Solid Interaction Using Smoothed Particle Hydrodynamics Jihoe Kwon, Heechan Cho, Hoon Lee
11.20	One Dimensional Compression of Sand-Silt Mixtures Using 2D DEM Nguyen Hop Minh, Yi Pik Cheng	A Coupled DEM/CFD Study of Suction Filling Yu Guo, Chuan-Yu Wu, Colin Thornton

11.40	Using Discrete Element Methods to Model Soil – Machine Interaction Mustafa I. Alsaleh	A Combined Contact Model in CDEM and its Application in Blasting Engineering Chun Feng, Shihai Li, Xiaoyu Liu
12.00	Lunch	
13.00	KEYNOTE LECTURE: Modelling of Coupled Multi-Physics in Discrete Systems Y. T. Feng, K. Han, D. R. J. Owen	
	SOILS, ICE, ROCK, LANDSLIDES, EARTHQUAKES – PART 2 Session Chair: G. G. Schiava D’Albano	COUPLED SOLUTIONS – PART 2 Session Chair: Tomas Lukas
13.40	The Development and Application of Stochastic Block Shape Model in Continuum-Based Discrete Element Method Tianping Liu, Jingjing Lu, Shihai Li, Baojuan Qiao	Computational Investigation of the Dispersion of Cohesive Aggregates Graham Calvert, Ali Hassanpour and Mojtaba Ghadiri
		OTHER APPLICATIONS – PART 1 Session Chair: Tomas Lukas
14.00	Adaptive Discrete/Finite Element Coupling for Rock Cutting Process Simulations Carlos Labra, Jerzy Rojek, Eugenio Oñate	A Case Study of Impact on Glass Using the Combined Finite-Discrete Element Method Xudong Chen, Andrew HC Chan and Jian Yang
14.20	Failure Mechanism about RSA under Equal Stress Boundary Conditions Fan Yongbo, Li Shihai, Feng Chun, Hou Yuefeng	3-Distinct Element Analysis of Head Top Coal’s Stability Control during Mechanized Top-Coal Caving in Steep Thick Seam Li Kai-qing
14.40	Using DEM for the Assessment of K_0 in Soils Daniel Barreto	DEM Modelling of Particle Flow in a Turbula® Mixer M Marigo, D L Cairns, M Davies, A Ingram, E H Stitt
15.00	Theoretical Investigation of Regularities of Model Fault Zone Mechanical Response to Low-Amplitude Dynamic Mechanical Actions Sergey V. Astafurov, Evgeny V. Shilko, Alexandr S. Grigoriev, Artem Yu. Panchenko, Sergey G. Psakhie	Modelling Breakage Environment in Tumbling Mills Using DEM and Analyzing the Outputs N. S. Weerasekara, M. S. Powell, S. Cole, J. Favier
15.20	Tee and coffee	
	SOILS, ICE, ROCK, LANDSLIDES, EARTHQUAKES – PART 3 Session Chair: G. G. Schiava D’Albano	OTHER APPLICATIONS – PART 2 Session Chair: Tomas Lukas
15.40	The Use of Discrete Element Methods on the Dynamic Analysis of Multi-Drum Ancient Structures Loizos Papaloizou, Petros Komodromos	Vehicle Dynamics on Off-Road Terrain Matt Sinnott and Paul Cleary
16.00	Simulating P-Wave Propagation in DEM G. Marketos	Charge and Structure Behaviour in a Tumbling Mill Pär Jonsén, Bertil I. Pålsson, Kent Tano, Andreas Berggren

	OTHER APPLICATIONS – PART 3 Session Chair: G. G. Schiava D'Albano	
16.20	On Application of Symbiotic Cellular Automaton Method for Simulation of the Mechanical Response of Lignite A.V. Dimaki, E.V. Shilko, A.I. Dmitriev, S. Zavsek, J. Pezdic, S.G. Psakhie	Analysis of Particle Charging Behaviour via Rotating Chute of Blast Furnace by Using Discrete Element Method Hiroshi Mio, Shinroku Matsuzaki, Kazuya Kunitomo, Jusuke Hidaka
16.40	Modelling Flexible Material Using EDEM: Calibration and Industrial Applications Stephen Cole	Study on Cutting Forces of SiC Machining Process with Pre-Stressed Using DEM Simulation Shengqiang Jiang, Yuanqiang Tan, Dongmin Yang, Yong Sheng
17.00	DEM Analysis on Particle Behaviour in the Course of Sinter Mixture Charging Tsukasa Abe, Junya Kano, Masanori Nakano	DEM Simulation of Particle Motion in a Paddle Mixer Ali Hassanpour, Hongsing Tan, Andrew Bayly, Prasad Gopalkrishnan, Boonho Ng and Mojtaba Ghadiri
17.20	Modelling Emergency Egress from a Public Facility Gary A. Geissinger, Member, IEEE	Prediction of Particle Breakage in Agitated Dryers: a Combined DEM and Experimental Approach Colin Hare, Mojtaba Ghadiri
17.40	Coupled Discrete Element and Fluid Modelling with Non-Spherical Grains J. E. Hilton and P. W. Cleary	Simulation of the Confined Compression Test of Iron Ore Pellets Using Random Distributed 3D Multi Particle Finite Elements Gustaf Gustafsson, Hans-Åke Häggblad
18.00		

Directions

East Gate of the Mile End Campus is located just 3 minutes walk from the Mile End Tube Station.

Residential guests may collect their keys from the reception located in the **France House** (see the map) in the student village. The reception is open 24 hrs and rooms will be available after midday.

Room A – Mason Lecture Theatre

Room B – Clinical Medical Lecture Theatre

Both rooms are located in the **Francis Bancroft Building**, see the map.

Lunch and dinner will be held in the Octagon, which is located in the **Queen's Building**.

Queen Mary, University of London Mile End Campus map

