Computational Modelling '13

Presenters underlined

Monday 17th June

16.30-18.00   Registration, wine and cheese reception. Accompanying partners welcome

Tuesday 18th June

07.45   Registration opens

09.00   **Introduction to Cornwall**
J. Wills (MEI, UK)

09.15   *Technical Session 1*
Chairmen: P. Jonsén (Luleå University of Technology, Sweden) and A.C. Silva (Goiás Federal University, Brazil)

09.15   **Effect of the objective function in the design of concentration plants**
F. Lucay (CICITEM, Chile), E.D. Gálvez (Universidad Católica del Norte, Chile) and L.A. Cisternas (Universidad de Antofagasta, Chile)

09.35   **Using computational modelling for efficient long distance ore transport using pipelines**
C. Ihle, A. Tamburrino and S. Montserrat (Universidad de Chile, Chile)

09.55   **Validation of DEM particle-to-boundary interactions via wall friction investigations**
P. Wypych, D. Hastie and A. Grima (University of Wollongong, Australia)

10.15   **Representation of particle size and density distributions using polynomial functions to simulate multiphase flows**
J.-S. Kroll-Rabotin and R.S. Sanders (University of Alberta, Canada)

10.35   Coffee

11.20   **Calibrated DEM modelling for design and operation of complex bulk material handling systems**
P. Wypych, A. Grima (University of Wollongong, Australia), R. LaRoche (DEM Solutions Inc., USA) and D. Curry (DEM Solutions Ltd, UK)

11.40   **Modelling spray particle interaction by a coupled CFD-DEM method**
C. Goniva, J. Kerbl, S. Pirker and C. Kloss (Johannes Kepler University, Austria)

12.00   **Scale-up of batch grinding data for simulation of industrial milling of platinum group minerals ore**
N. Chimwani, F.K. Mulenga, D. Glasser and D. Hilderbrandt (University of Witwatersrand, South Africa)

12.20   **An impact energy based approach to predict grinding in mills of different sizes**
C.T. Jayasundara, R.Y. Yang and A.B. Yu (University of New South Wales, Australia)

12.40   Lunch

14.00   *Technical Session 2*
         Chairman: L.A. Cisternas (Universidad de Antofagasta, Chile)

14.00   **Iterative algorithm for closed circuit circulation load calculation**
         A.C. Silva, E.M.S. Silva and R.A. de Rezende (Goiás Federal University, Brazil)

14.20   **Numerical modeling of inhomogeneous rock breakage behavior based on texture images**
         Y. Wang (JKMRC, Australia)

14.40   **Numerical study of the coal-particle fragmentation efficiency in a roller pulveriser**
         Y.D. Zhou, Q.M. Li, Y.L. Liu and S.Q. Cao (Tsinghua University, China)

15.00   **A novel method for modelling of interactions between pulp, charge and mill structure in tumbling mills**
         P. Jonsén, B.I. Pålsson, J. Stener and H.-Å. Häggblad (Luleå University of Technology, Sweden)

15.20   **Performance characterisation of AG/SAG mill pulp lifters using CFD techniques**
         N.S. Weerasekara and M.S. Powell (University of Queensland, JKMRC, Australia)

15.40   **Numerical simulations of comminution slurries over complex topographies: putting together CFD and pipeline integrity**
         T. Trewhela, C. Ihle and A. Tamburrino (Universidad de Chile, Chile)

16.00   Coffee

16.40   Optional Guided Coast Path Walk, ending with a beer at the Chain Locker Pub, Old Falmouth. Accompanying partners welcome

Wednesday 19th June

08.40   *Technical Session 3*
         Chairmen: Q.G. Reynolds (Mintek, South Africa) and A. Yu (University of New South Wales, Australia)

08.40   **Hydrocyclones simulation using a modification in Plitt´s equation**
         A.C. Silva, E.M.S. Silva and J.D.V. Matos (Goiás Federal University, Brazil)

09.00   **Numerical analysis of hydrocyclone with different vortex finder designs under different feed solid concentrations**
         M. Ghodrat, S.B. Kuang, A.B. Yu (University of New South Wales, Australia), A. Vince (Elsa Consulting Group, Australia), G.D. Barnett and P.J. Barnett (Minco Tech Australia Pty Ltd, Australia)

09.20   **CFD simulation of a centrifugal air classifier used in the aggregate industry**
         R. Johansson and M. Evertsson (Chalmers University of Technology, Sweden)

09.40   **CFD simulations of flow and classification characteristics of a circulating air classifier**
         J.H. Yoon (Daegu University, Republic of Korea), J.K. Cheong, W.H. Kang, H.H. Chae and K.S. Kim (Hyundai Engineering and Construction, Republic of Korea)

10.00   **Simulating a low intensity magnetic separator model (LIMS) using DEM, CFD and FEM magnetic design software**
         V. Murariu (Metso Minerals Industries, USA)

10.20   Coffee

11.00   **CFD-DEM modelling for the simulation of particle ejection by a sensor-based sorter**
         R. Fitzpatrick, R.D. Pascoe and H.J. Glass (Camborne School of Mines, UK)

11.20   **CFD-DEM study of the multiphase flow in dense medium cyclones: effect of wear**
K. Chu, S. Kuang, A. Yu (University of New South Wales, Australia) and A. Vince (Elsa Consulting Group, Australia)

11.40   **Advanced methods of flux identification for clarifier-thickener simulation models**
F. Betancourt, R. Bürger, C. Mejías (Universidad de Concepción, Chile) and S. Diehl (Lund University, Sweden)

12.00   **Dewatering system optimization in mineral processing**
R. Cruz, L.A. Cisternas (Universidad de Antofagasta, Chile) and E.D. Gálvez (Universidad Católica del Norte, Chile)

12.20   **Optimization and sensitivity analysis of a CFD - heap leach model**
D. McBride, M. Cross, C. Bennett (Swansea University, UK) and J.E. Gebhardt (FLSmidth, USA)

12.40   Lunch

14.00   *Technical Session 4*
Chairmen: N.S. Weerasekara (University of Queensland, JKMRC, Australia) and S.J. Neethling (Imperial College, UK)

14.00   **Predicting fluid flow and mass transfer in heaps using SPH**
D.J. Barker and S.J. Neethling (Imperial College, UK)

14.20   **Use of mesh adaptivity in heap leaching simulation**
P. Mostaghimi and S.J. Neethling (Imperial College, UK)

14.40   **CFD modelling and simulation of industrial-scale copper electrorefining process**
S. Kawai and T. Miyazawa (Mitsubishi Materials Corporation, Japan)

15.00   **Development of a validated thermal model for the slow-cooled process of Waterval smelter converter matte**
B. de Villiers (Anglo American Platinum, South Africa)

15.20   Coffee

16.00   **Numerical study of hot charge operation in ironmaking blast furnace**
S.B. Kuang, Z.Y. Li, A.B. Yu (University of New South Wales, Australia), Y.H. Qi and D.L. Yan (Central Iron & Steel Research Institute, China)

16.20   **On the formation of blast furnace raceways - A combined experimental and Open Source CFD-DEM investigation**
A. Hager, C. Kloss, S. Pirker and C. Goniva (Johannes Kepler University, Austria)

16.40   **Computational modelling of shear-layer instabilities and vortex formation in DC plasma arcs**
Q.G. Reynolds (Mintek, South Africa)

17.00   Closing of conference and invitation to Computational Modelling '15
A.J. Wills (MEI, UK)

POSTERS

CFD-DEM study of the multiphase flow in a dense medium cyclone: effect of particle size distribution
J. Chen, K. Chu, A. Yu (University of New South Wales, Australia), A. Vince (Elsa Consulting Group, Australia), G.D. Barnett and P.J. Barnett (Minco Tech Australia Pty Ltd, Australia)

Modelling of ironmaking blast furnace: effects of slot and sector geometries
Y. Shen, B. Guo, A. Yu (University of New South Wales, Australia), P. Austin and S. Chew (BlueScope Steel Research, Australia)

Modelling pulverized coal injection in blast furnace: an overview on effect of key variables on gas distribution
Y. Shen, A. Yu (University of New South Wales, Australia) and P. Zulli (BlueScope Steel Research, Australia)

Algorithm to generate particle populations from size distribution functions
A.C. Silva (Goiás Federal University, Brazil), R. Galery and A.E.C. Peres (Minas Gerais Federal University, Brazil)

Model study of raceway region in ironmaking blast furnaces: effect of bird's nest of coke bed
T. Shiozawa, Y. Shen, A. Yu (University of New South Wales, Australia) and P. Austin (BlueScope Steel Research, Australia)

COMSOL simulation of a copper ore leaching in a pilot column
J.D. Apollus and A.V. Kolesnikov (Tshwane University of Technology, South Africa)