

**19th International Conference on Transport and Sedimentation of Solid Particles
Cape Town, 24-27 September, 2019**

Conference Programme

24 September 2019 – Tuesday

08.30	09.30	Registration	
09.30	09.45	Opening session – Chair: Rainer Haldenwang Welcome: Jerzy Sobota (Wroclaw University) and Chris Nhlapo (Vice Chancellor CPUT)	
		Technical Session I – Chair: Rainer Haldenwang	Hydraulic Conveying I
09.45	10.10	A Thomas: Deposition of Wide Size Distribution, Bingham Plastic Slurries in Turbulent Pipe Flow	15
10.10	10.35	J Furlan, R Visintainer, A Sellgren, V Matoušek and L Pullum: Pipe loop testing of a mixture containing fine, dense solids with magnetic properties	23
10.35	11.00	V Matoušek and S Zrostlík: Evaluation of local turbulent support of particles in intense transport of contact load	31
11.00	11.30	Coffee Break	
		Technical Session II – Chair: Jerzy Sobota	Hydraulic Conveying II
11.30	11.55	T Jones and J Ganeshalingam: Centre of Concentration in Particle-Bearing Liquids	39
11.55	12.20	P Slatter: The design of Hydro-transport systems to facilitate sustainable industrial practice	47
12.20	12.45	V Alexandrov and I Trufanova: The Kachkanarsky MCC iron ore processing tailings slurry hydraulic transport parameters	57
12.45	13.35	Lunch break	
		Technical Session III – Chair: Vaclav Matousek	Hydraulic Conveying and Case Studies
13.35	14.00	G Stozik, and R Jendrus: Operation of gravitational hydrotransport pipeline systems in coal mines	67
14.00	14.25	G Diedericks, F Smit and J Lencart e Silva: Evaluation of modelling methodologies to simulate placement of dredge material: a case study	75
14.25	14.50	PK Senapati, JK Pothal, R Barik, CBN Ronee Pradhan, R Kumar, S Basu Prediction of pressure drop and optimization of operational pipe flow parameters for hydraulic transportation of concentrated iron ore fines slurry	83
14.50	15.15	N Heywood: Review of frictional pressure gradient reduction for horizontal laminar pipe flow of non-Newtonian slurries with gas injection	93
15.15	15.45	Coffee Break	
		Technical Session IV – Chair: Pavel Vlasak	Dredging and Fittings losses
15.45	16.10	SA Miedema, C van Rhee, BJ Nieuwboer: Scale laws for spillage in cutterheads in dredging	103
16.10	16.35	M Khahledi, R Haldenwang, V Fester and R Chhabra: Non-Newtonian fluids discharge through circular and square orifices from a tank	113
16.35	17.00	A Bartosik, and T Wojtyniak: Prediction of frictional losses in slotted sieves	121
17.00	17.25	T Mohajane, M Khahledi, R Haldenwang, V Fester and R Chhabra: Effect of round orifice aspect ratio on non-Newtonian fluid discharge from tanks	129
17.30	19.30	Welcome Reception – Hotel School (conference venue)	

25 September 2019 – Wednesday

8.00	<i>Registration</i>		
		Technical Session V – Chair: Paul Slatter	Hydraulic Conveying III
8.20	8.45	M Jovanovič and V Matoušek: The effect of longitudinal slope on solids transport and friction in particle-laden flow above stationary deposit in pipe	137
8.45	9.10	A Thomas, S Whitton and N Cowper Jnr: The effect of entrained micro-bubbles of air on slurry pipeline flow behaviour and design	145
9.10	9.35	J Xia, H Ren and Y Fu: Investigation of pressure variation in long distance slurry pipeline through transport cycle	153
9.35	10.00	V Matoušek, J Konfršt, J Krupička, and P Vlasák: Anomalous pressure drop in settling slurry flow through pipe of mild negative slope	161
10.00	10.30	Coffee break	
		Technical Session VI – Chair: Arno Talmon	Instrumentation
10.30	10.55	A Adler, A Sutherland, and R Kotze: Location of bed interface in settling slurry pipe flow using ERT	169
10.55	11.20	S Beg, S Bhaskar, M Mohsin, DR Kaushal: Experimental investigation of velocity distribution inside invert trap using 2D PIV method	177
11.20	11.45	R Yan, R Sharma, H Viumdal and S Mylvaganam; Soft-Sensing with ECT in particulate transport with focus on bubble characterization	185
11.45	12.10	V Berman, S Kril, P Vlasák and E Bournaski: Some aspects of using electro - diffusion method for diagnostics of kinematic structure of solid –liquid flow in pipelines	195
12.15	13.15	Lunch	
		Technical Session VII – Chair: Allan Thomas	Pneumatic-Hydraulic Conveying
13.15	13.40	H Kalman, D Portnikov, OG Gabrieli and NM Tripathi: What do pneumatic conveying and hydraulic conveying have in common?	203
13.40	14.05	N Santo, D Portnikov and H Kalman: Experimental study on particle velocity and acceleration length in pneumatic and hydraulic conveying systems	211
14.05	14.30	N Heywood and P Slatter: Deration of Centrifugal Pumps for non-Newtonian slurries	219
14.30	14.55	P Vlasák, Z Chara, V Matoušek, M Kesely, J Krupička and J Konfršt: Local concentration distribution of settling slurry flow in inclined pipe sections	229
14.55	15.25	Coffee break	
		Technical Session VIII – Chair: Pete Goosen	Modelling I
15.25	15.50	GV Messa, S Malavasi, J Zhang and SA Shirazi: Numerical prediction of the impact erosion produced by dense slurry jets	237
15.50	16.15	A Talmon: Mathematical analysis of channelisation in non-Newtonian laminar deposition flow	245
16.15	16.40	DD Silavwe, SG Wallis, and IC Brink: On the influence of numerical methods for the advection dispersion model on estimated longitudinal dispersion coefficients	253
16.40	17.05	C van Rhee and P Dobbe: CFD simulation of shear settling in non-Newtonian Flow	261
17.15	17.45	Conference Committee meeting	
19.00	21.30	Conference Dinner – Hotel School (Restaurant)	

26 September 2019 – Thursday

Technical and Cultural Tour – Paterson & Cooke laboratories and trip around Cape Peninsula including Cape Point.

27 September 2019 – Friday

8.00	Registration		
	Technical Session IX – Chair: Nigel Heywood		Rheology and Miscellaneous
8.20	8.45	M Gruszczyński, J Błotnicki, S Czaban and T Tymiński: The effect of solid components on the rheological properties of copper ore tailings	269
8.45	9.10	HP Singh, AV Singh, and DR Kaushal: Effect of chemical additive quick lime on the rheology of coking coal slurry	277
9.10	9.35	B Zengeni, D Nekhavhambe and P Goosen: Sensitivity of non-Newtonian slurry viscous properties to temperature	285
9.35	10.00	T Senfter, B Stern, M Senn, M Berger, M Pillei, A Bockreis, W Rauch, and M Kraxner: Field study on the removal of solid impurities in wastewater treatment plants by implementing a modified hydrocyclone	293
10.00	10.30	Coffee break	
	Technical Session X – Chair: Trevor Jones		Sedimentation
10.30	10.55	C Mc Leod, O Sawadogo, and G Basson: Optimization of sand trap and settler designs for efficient deposition of suspended sediment	301
10.55	11.20	K Kiringu, and G Basson: Removal of fine non-cohesive sediment by swirl/vortex settling basin at small river abstraction works	311
11.20	11.45	I Ivanov and E Bournaski: Suspended sediments and water flow of the Mesta River in Bulgaria	319
11.45	12.10	G Basson, C Mc Leod, and L van der Spuy: Hydraulic design and physical model optimisation of sustainable river abstraction works on alluvial rivers with sediment management features for potable water supply in South Africa	327
12.15	13.15	Lunch	
	Technical Session XI – Chair: Haim Kalman		Modelling II
13.15	13.40	TD Schouten, GH Keetels and C van Rhee: Suspended pipeflow with OpenFOAM	337
13.40	14.05	F Plewa, and G Strozik and M Popczyk: Prediction of flow parameters of mixtures for filling of cavings in the light of laboratory measurements	345
14.05	14.30	R Nsanzubuhoro, B Maja, M Stander and P Goosen: Assessment of a two-layer model for laminar pipe flow of slurries comprising a coarse fraction in non-Newtonian carrier fluid	353
14.30	15.00	Coffee break	
	Technical Session XII – Chair: Veruscha Fester		Hydraulic Conveying IV
15.00	15.25	S Beg and DR Kaushal: Experimental investigation of static settled concentration of multi-sized coking coal-water slurry	363
15.25	15.50	Y Levin, A Ullman, D Portnikov and H Kalman: Simple pick-up velocity measurements procedure and defining non-settling particles using rheometer	371
15.50	16.00	Conference Closing – Chair: Rainer Haldenwang	