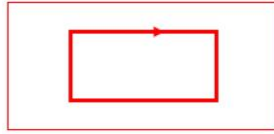


South African Council for
Automation and Control



SACAC

CONTROL SYSTEMS DAY – 12 November 2015 (Stellenbosch University)

PROGRAMME

- 08:30 Arrival of guests (Tea/Coffee)
09:00 Welcome address: Prof Ed Boje, University of Cape Town

Session 1

- 09:10 Hybrid model predictive control of a run-of-mine ore milling circuit
(*S. Botha, I.K. Craig; UP*)
09:30 Fault detection for simulated valve faults in a high pressure leaching process
(*J.J. Miskin, B.S. Lindner, L. Auret; SU*)
09:50 Nonlinear observability of a grinding mill model's states and parameters
(*J.D. le Roux, I.K. Craig; UP*)
10:10 Modelling of tuberculosis for control
(*R.R. Küssel, I.K. Craig; UP*)

10:30 Tea Break

Session 2

- 11:00 Accurate autonomous landing of a fixed-wing aircraft under crosswind conditions
(*A. de Bruin, T. Jones; SU*)
11:20 Flight control for minimum power demand in extended formation flight of commercial aircraft
(*G. van Wyk, T. Jones; SU*)
11:40 Active aerodynamic envelope recovery for large transport aircraft using Lyapunov-based control
(*J.A.A. Engelbrecht, T. Jones; SU*)
12:00 Ride comfort in commercial aircraft during formation flight using conventional flight control
(*E.F. Trollip, J.A.A. Engelbrecht; SU*)

12:20 Lunch Break

Session 3

- 13:30 The autonomous landing of an unmanned helicopter on a moving platform
(*C. Fourie, T. Jones; SU*)
13:50 Autonomous landing of a fixed-wing aircraft with partial wing and tail loss
(*G.L. Hugo, J.A.A. Engelbrecht; SU*)
14:10 Aerial righting in a mobile robot using a spider-inspired dragline
(*S. Shield, C. Fisher, A. Patel; UCT*)
14:30 A wireless motion capture system for tracking the cheetah tail during rapid manoeuvres
(*C. Fisher, A. Patel, E. Boje; UCT*)

15:10 Tea Break

Session 4

- 15:30 Parallelizing the rapidly-exploring random tree algorithm on a GPU
(*N. Domah, A. Patel; UCT*)
15:50 TAYObot: A kangaroo rat inspired stunt robot capable of performing a 360-degree yaw rotation
(*J. Perry, A. Patel; UCT*)
16:10 Stone Three Mining Solutions: Industrial applications
(*R. Brown; Stone Three Mining Solutions*)
16:30 Concluding remarks: Dr L Auret, Stellenbosch University