

DEPARTMENT OF DECISION SCIENCES

RESEARCH GROUP – CCRDS

Title of the research group	Computability, Complexity and Randomness in Decision Science
Research group leader	Safari Mukeru and George Davie
Members of the research group (full names)	Safari Mukeru, George Davie, Petrus H Potgieter, Delpont Terblanche (Department of Philosophy)
Research objectives	To analyse the interplays between probability theory and stochastic processes, algorithmic randomness, computability, and complexity and apply them to study fine properties of algorithmic stochastic processes.
Keywords	Randomness, complexity, computability, Brownian motion, algorithmic randomness, stochastic process
Catalytic Niche Areas	Innovation and capacity building in science and technology.
Selected research outputs (10 max/ if available)	1. Fouche, W.L. and Mukeru, S. On local times of algorithmically random Brownian motion. Theoretical Computer Science, 2023 2. Davie, G. Computability of convergence rates in the ergodic theorem for Martin-Löf random points, <i>J. Logic and Analysis</i>, 2022 3. Mukeru, S. Some applications of the Menshov-Rademacher theorem. (Comptes Rendus Mathematique, Paris, 2021). 4. Pauly, A. Fouche, W.L. Davie, G. Weihrauch-completeness for layerwise computability Logical Methods in Computer, 2018. 5. Mukeru, S. Representation of local times of fractional Brownian motion, Stat. and Probab. Letters, 2017.