**<Dr. Proscovia Namayanja>**
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| Educational Curriculum | <2008> <Bachelor of Science with Education> in <Mathematics>, <Makerere University>, <Kampala>, <Uganda><br><2013> <Doctor of Philosophy> in <Applied Mathematics >, <University of KwaZulu-Natal>, <Durban>, <South Africa> |
| Professional Experience | <2014> to <present> <Lecturer> at <University of KwaZulu-Natal><br><year> to <year> <position> at <institution> |
| Current research interest | - <Chaos in systems of transport equations on networks><br>- <Chaotic dynamics in systems of third order difference equations with complex parameter><br>- <Graph structure, partition sets and inverses of nonnegative matrices> |
| Research methods | - <Qualitative study, sometimes simple programming for verification purposes> |
| Publications | 1) J. Banasiak J and M. Lachowicz, *Topological chaos for birth-and-death-type models with proliferation*,<br>Math. Models Methods Appl. Sci. 12(6) (2002), 755-775<br>2) J. Banasiak and M. Moszynski, *Dynamics of birth-and-death processes with proliferation- stability and chaos*, Discrete and continuous dynamical systems, Vol. 29, 1(2011).<br>3) J. Banasiak J and P. Namayanja, *Asymptotic behaviour of flows on reducible networks*, Networks and<br>Heterogenous Media, 2014. |

**Title of the talk**

We show that for a system of transport equations defined on the edges of an infinite network, thesemigroup generated is hypercyclic if and only if the adjacency matrix of the line graph is also hypercyclic. We further show that there is a range of parameters for which a transport equation on an infinite network with no loops is chaotic on a subspace *Xe* of the weighted Banach space 1. We relate these results to the birth-and-death model in [1], [2] (in the publication section above) by showing that when there is no proliferation; the birth-and-death model described by an infinite system of ODEs is also chaotic in the same subspace *Xe* of 1.