<Dr. Conrad Bertrand Tabi>
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Educational Curriculum	<2006> <DEA> in <Physics>, <University of Yaounde I>, <Yaounde>, <Cameroon> <2010> <PhD> in <Physics>, < University of Yaounde I >, <Yaounde>, <Cameroon>
Professional Experience	<2010> to <2012> <Lecturer> at <University of Yaounde I> <2012> to <2015> <Senior Lecturer> at <University of Yaounde I> <2015> to today <Senior Lectiurer> at <iBotswana International University of Science and Technology>
Current research interest	- <Wave patterns in neural networks> - <Synchronized waves in active systems> - <Fractional-order derivatives in reaction-diffusion phenomena>
Research methods	- <research method>
Publications	<three most important publications on the topic that you will present>

Title of the talk: Nonlinear Patterns and Synchronized States in Neural Networks

Abstract of the talk (10 lines):

We explicitly show the existence of two frequency regimes in a two- dimensional Hindmarsh-Rose neural network. Each of the regimes, through the semi- discrete approximation, is shown to be described by a two-dimensional complex Ginzburg–Landau equation. The modulational instability phenomenon for the two regimes is studied, with consideration given to the coupling intensities among neighboring neurons. Analytical solutions are also investigated, along with their propagation in the two frequency regimes. These waves, depending on the coupling strength, are identified as breathers, impulses and trains of soliton-like structures. Although the waves in two regimes appear in some common regions of parameters, some phase differences are noticed and the global dynamics of the system is highly influenced by the values of the coupling terms. For some values of such parameters, the high-frequency regime displays modulated trains of waves, while the low-frequency dynamics keeps the original asymmetric character of action potentials. We argue that in a wide range of pathological situations, strong interactions among neurons can be responsible for some pathological states, including schizophrenia and epilepsy.