Mathematics Colloquium Lecture Series

The University of Guam
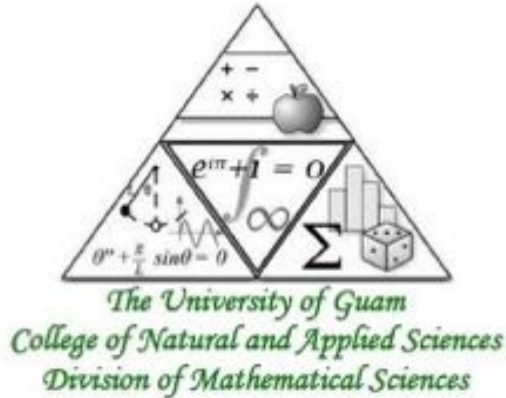**College of Natural and Applied Sciences**
Division of Mathematical Sciences

on *Friday, October 5, 2018,* at *4:00 –5:20 p.m. in WB 3*

Dr. Yoshifumi Takenouchi will hold a colloquium lecture titled

Digital "entropy" as an invariant under a refinement of the partition of the interval

Dynamical systems are investigated through a mapping of an interval to itself. Repeatedly applying the mapping, we obtain a dynamical system described by a piecewise linear map, a corresponding permutation and an induced directed graph. By the *characteristic polynomial* of the adjacency matrix a ternary number called *digital "entropy"* is defined. The talk will focus on what happens when the partition of the interval is refined. It is proved that the digital "entropy" remains *invariant!* Further results will be outlined. The talk will give the audience a unique insight into dynamical systems from one of the experts!

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The *Challenges in Mathematics Colloquium Lecture Series* is organized by the Division of Mathematical Sciences of the Colleges of Natural and Applied Sciences of the University of Guam. Our location is at the Division of Mathematical Sciences in Warehouse B, next to the Health-Science Building. Our intention is to introduce a wider audience of those who are interested in mathematical challenges into state-of-the-art mathematical theories, puzzles and open problems. We invite students, colleagues working in any area of science and everybody who wants to learn more about mathematics in an accessible setting.

Everybody is welcome!