

Ichiro Tsuda (<http://www.math.sci.hokudai.ac.jp/~tsuda/>)

e-mail address: tsuda@math.sci.hokudai.ac.jp

A title of a talk: to be announced

Research Fields:

complex systems, chaotic dynamical systems, mathematical modeling of the brain function and biological evolution.

Key Words:

Chaos, chaotic itinerancy, Cantor coding, dynamic memories, episodic memories.

Ichiro Tsuda holds the position of Professor in the Research Institute of Electronic Science (RIES), and the Graduate School of Mathematics, Hokkaido University, as well as Visiting Professor at Department of Mechanical Engineering, Osaka University. He is a member of Center Of Excellence (COE) in the Department of Mathematics, Hokkaido University. He is also an Advisory Board of Complex Systems Institute at Kalamazoo College, USA. He was Visiting Professor at the Japan Advanced Institute of Science and Technology (JAIST), and was group leader of the Basic Design Group, National Bioholonics Project of ERATO (Exploratory Research for Advanced Technology), Research Development Corporation of Japan (currently, named JST (Japan Science and Technology Corporation)). He has published widely in the field of dynamical processes and the brain. His research interest is mathematical modelling of the higher brain function including memory dynamics, thoughts, and inference processes, and also numerical studies of chaotic dynamical systems. He constructed a one-dimensional map for sufficiently explaining chaos and bifurcation structure in the BZ reaction, and found noise-induced order in such a model. He also constructed neural network models for dynamic associative memory and also for episodic memory, based on physiological data on class I neurons and different types of synapses, where he found a new dynamical state, named chaotic itinerancy, and proposed its dynamical interpretation in terms of Milnor attractor. He is also an editor of scientific journals of *Neural Networks*, *Chaos and Complex Letters*, *New Generation Computing*, and *J. of Cognitive Neurodynamics*, and also an advisory board of *Chaos*.

