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## 2008 Distinguished Lecture series

### Turbulent Transitions and Frustrated States

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Dec. 4, 2008, pm13:00-, at Room 1-103, Department of Electrical and Communication Engineering, Aoba-yama campus, Tohoku University

Abstract: A wealth of fascinating phenomena has emerged from studies of high-speed magnetization reversal and magnetic domain stability in nanostructures. This lecture will provide an introduction to essential concepts, illustrate examples of new physics, and present some challenging, unanswered questions. Topics will include examples of frustration in exchange bias systems and analogies to spin glasses; control of nonlinear processes in patterned magnetic structures and parametric processes incurred during high-speed reversal; pinned and viscous domain wall motion in ultra-thin films and nanowires; and electronic and spin wave transport through domain walls. These examples will illustrate reversal processes and domain stability issues relevant for a wide variety of magnetic device applications, including concepts being explored for novel spin logic schemes.