

# TH/P5-13: A. Matsuyama<sup>1</sup>, M. Yagi<sup>1</sup>, Y. Ishii<sup>1</sup>, N. Aiba<sup>1</sup>, and Y. Kagei<sup>2</sup> (<sup>1</sup>JAEA, Japan ; <sup>2</sup>RIST, Japan)

## “Simulation of energy-dependent stochastic transport induced by low-order MHD instabilities for runaway electron mitigation”

Runaway electron mitigation is an urgent issue for ITER. This contribution addresses re-distribution of runaway electrons by low-order resonant modes.

- ✓ **METHOD:** simulation code
  - Relativistic guiding-center code (ETC-Rel)
  - Nonlinear reduced MHD modeling
- ✓ **We have shown that for highly-relativistic REs, drift resonance occurs due to poloidal asymmetry inherent to toroidicity and affects the onset of stochastic orbits.**
- ✓ Resultant secondary islands interfere with MHD modes, affecting stochastic criterion (even depending on the island phase).
- ✓ RE re-distribution is dominated by drift resonance as well as by nonlinear and toroidal coupling between the MHD modes.

