

**Lie Groups and Representation Theory Seminar  
at the University of Tokyo**

**リ一群論・表現論セミナー**

- DATE May 13 (Tue), 2008, 16:30–18:00
- PLACE Room 126, Graduate School of Mathematical Sciences
- SPEAKER **Akishi Kato** (加藤晃史) (University of Tokyo)
- TITLE On endomorphisms of the Weyl algebra
- ABSTRACT Noncommutative geometry has revived the interest in the Weyl algebras, which are basic building blocks of quantum field theories. The Weyl algebra  $A_n(C)$  is an associative algebra over  $C$  generated by  $p_i, q_i$  ( $i = 1, \dots, n$ ) with relations  $[p_i, q_j] = \delta_{ij}$ . Every endomorphism of  $A_n$  is injective since  $A_n$  is simple. Dixmier (1968) initiated a systematic study of the Weyl algebra  $A_1$  and posed the following problem: Is every endomorphism of  $A_1$  an automorphism? We give an affirmative answer to this conjecture.