ID de Contribution: **105** Type: **Non spécifié**

Are spin- polarized atoms clustering?

The interplay between spin and structure is a problem of interest in the field of nanomagnetism and cluster/surface physics. While this effect is less dominant in bulk materials, the ground state physical properties (including the geometry) of finite systems like clusters are strongly influenced by the spin, and different optimal ground state geometries are possible for different spin states of size- specific clusters (spin isomers). Further, the nature of bonding in finite systems is strongly influenced by the spin states of the constituent atoms. Of particular interest in finite systems is the question of what we can expect if a small number of spin-polarized atoms are placed on a plane, and allowed to assemble (or disassemble).
For the experimental clarification, spin-polarized cold atoms of cesium are soft-landed randomly on an argon substrate and spin clusters of cesium are expected to form through self-assembly. In this experiment, cesium atoms are cooled and trapped in the double magneto-optical trap. Thin film of rare gases such as argon is an ideal substrate with negligible interaction. We report the concept and the recent progress of the experimental study referring the theoretical prediction.

Auteur principal: M. TANAKA, Masamitsu (Univeristy of Yamanashi)

Co-auteurs: Prof. TORIKAI, Eiko (University of Yamanashi); Prof. ITO, Haruhiko (Tokyo Institute of Tecchnology); Prof. SHIRAKI, Ichiro (Univeristy of Yamanashi); M. NAKASHIMA, Natsuki (Univeristy of Yamanashi); M. WATANABE, Ryoji (Univeristy of Yamanashi); M. TOMOHIRO, Sato (Tokyo Institute of Tecchnology); M. YAMADA, Shungo (Tokyo Institute of Tecchnology); M. NOZAWA, Takeshi (Univeristy of Yamanashi); M. HASHIMOTO, Tomohiko (Univeristy of Yamanashi); M. YUKIHARU, Yukiharu (Univeristy of Yamanashi)

Orateur: M. TANAKA, Masamitsu (Univeristy of Yamanashi)