

# Classification of BPS Objects in N=6 Chern-Simons Matter Theory

*Tuesday 24 August 2010 14:17 (15 minutes)*

We investigate BPS conditions preserving  $n/12$  ( $n=1, \dots, 6$ ) supersymmetries in the Aharony-Bergman-Jafferis-Maldacena (ABJM) model. The BPS equations are classified in terms of the number of preserved supercharges and remaining subgroups of the  $SU(4)_R$  symmetry. We study the structures of a map between projection conditions for the supercharges in eleven dimensions and those in the ABJM model. The BPS configurations in the ABJM model can be interpreted as known BPS objects in eleven-dimensional M-theory, such as intersecting M2, M5-branes, M-waves, KK-monopoles and M9-branes. We also show that these BPS conditions reduce to the BPS conditions in N=8 super Yang-Mills theory via the standard D2-reduction procedure in a consistent way with the M-theory interpretation of the BPS conditions.

**Primary author:** Dr SASAKI, Shin (Tokyo Institute of Technology)

**Co-authors:** Mr IWASAKI, Koh (Tokyo Institute of Technology, Kyoto University); Dr FUJIMORI, Toshiaki (Tokyo Institute of Technology); Dr KOBAYASHI, Yoshishige (Tokyo Institute of Technology)

**Presenter:** Dr SASAKI, Shin (Tokyo Institute of Technology)

**Session Classification:** Formal/Astro 24-1 Chair: N. Sakai

**Track Classification:** Formal