

## On analog experiments indicating ascending super plumes and descending slabs

Shin-ya Okubo[1]; # Tadahiro Hatakeyama[2]; Takatoshi Yanagisawa[3]

[1] BIG, Okayama Univ. Science; [2] IPC, Okayama University of Science; [3] IFREE, JAMSTEC

We have prepared an analog experimental setting for huge and gusty ascending and descending flow in the mantle convection, such as super plumes and stagnant slabs. It is unexpected that such large ascending / descending heads occur in turbulent convections with  $Ra$  more than  $10^7$ .

We use magnetized materials (slimes and fluids) in a box Rayleigh - Benard type thermal convection. With adding gradation of magnetic field, magnetized materials are moved along the magnetic field lines and the pattern of the convection will be affected, or not.

We have tested the influence in the region of relatively low  $Ra$  and  $Pr$  and with small magnetized materials. In some cases the movement convolves the basic convection pattern. We will present in the session the results of preliminary experiments and discuss the problems and the future improvements.