

SIT039-P01

Room:Convention Hall

Time:May 24 14:00-16:30

## Memory of clay paste and its visualization as desiccation crack pattern

Akio Nakahara<sup>1\*</sup>, Hiroshi Nakayama<sup>1</sup>, Yousuke Matsuo<sup>1</sup>

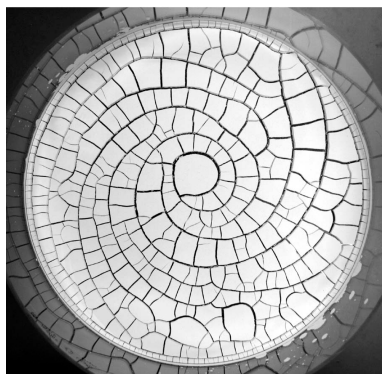
<sup>1</sup>Nihon Univ.

We find that clay paste remembers directions of vibration and flow due to its plastocity. We also find that these memories in pastes can be visualized as the morphology of desiccation crack patterns. When paste remembers the direction of vibration, the direction of crack propagation becomes perpendicular to the direction of the vibration, while when paste remembers a flow direction, the direction of crack propagation becomes parallel to the direction of the flow [1-3]. This phenomenon is already applied to control crack patterns in the field of technology. Here, we want to discuss on possibility that clay pastes in nature remember earthquakes and diastrophisms which happend old days in the history of earth.

[1] A. Nakahara and Y. Matsuo, J. Phys. Soc. Jpn, 74 (2005) 1362.

[2] A. Nakahara and Y. Matsuo, Phys. Rev. E74 (2006) 045102(R).

[3] Y. Matsuo and A. Nakahara, arXive:1101.0953v1 [cond-mat.soft].



Keywords: memory, clay paste, rheology, desiccation crack pattern