

Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

©2011. Japan Geoscience Union. All Rights Reserved.



SSS029-P14

Room:Convention Hall

Time:May 23 14:00-16:30

Slow and rapid slip in sliding friction between polymer gel and plexiglass

Tetsuo Yamaguchi^{1*}, Takane Hori², Hide Sakaguchi²

¹Dep. Appl. Phys, Univ. Tokyo, ²JAMSTEC

When a soft and sticky gel is slid against a hard substrate, spatio-temporal stick-slip motions and the power-law statistics (GR law) are often observed. In this presentation, we report our experimental studies on sliding friction between silicone gel and plexiglass with various degrees of viscoelasticity in silicone gel.

The system shows slow slip events in viscous gels and rapid events

for less viscous gels, and the size-duration relation follows M_0 to $T^{1/2}$ for viscous gels. We will also report more detailed analysis by modeling and visualization of the contact area.

Keywords: slow slip, laboratory experiment, polymer gel, scaling law