

Along-strike variation of seismic behavior of the Philippine fault

TSUTSUMI, Hiroyuki^{1*}, PEREZ, Jeffrey²

¹Department of Geophysics, Kyoto University, ²Philippine Institute of Volcanology and Seismology

The Philippine fault is a 1250-km-long, left-lateral strike-slip fault extending NNW parallel to the Philippine archipelago. This fault has been very active in the past 100 years with several destructive earthquakes accompanied by surface rupture. There is notable along-strike variation in historical- and paleo-seismicity of the Philippine fault that seems to be composed of locked, transition, and creeping sections. The along-strike variation of seismic behavior of the Philippine fault may be in part controlled by variation of thickness and rigidity of seismogenic crust along the fault. The Philippine fault crosses the volcanic front related to the Philippine Sea plate subduction at the latitude of Leyte Island where there are many geothermal fields along the fault. The seismogenic brittle crust in Leyte Island may be thin and thus elastic strain may not accumulate to produce large earthquakes.

Keywords: Philippine fault, historical earthquakes, trenching, size and interval of surface-rupturing earthquakes, creeping