

Distribution and structures of blind thrust faults beneath the Tokyo metropolitan area

ISHIYAMA, Tatsuya^{1*} ; SATO, Hiroshi¹ ; KATO, Naoko¹ ; ABE, Susumu² ; WATANABE, Hidehisa³ ; SHIGA, Nobuhiko³

¹Earthquake Research Institute, University of Tokyo, ²R&D Department, JGI, Inc, ³Mitsui Mineral Development Engineering Co., Ltd.

We show subsurface geometries of several active blind thrusts beneath this highly urbanized area, based on tectonic landforms, high-resolution seismic reflection data, gravity anomaly data, and Quaternary stratigraphy. Deep seismic reflection profiles corroborate the notion that steeply dipping blind thrusts are reactivated normal faults originally formed by middle Miocene extensional tectonics. Despite very slow (less than 0.1 mm/yr) late Quaternary slip rates, our work suggests the presence of previously unrecognized faults that pose more seismic hazards to Tokyo and outlying communities, and urges more intense efforts to shed more light on the recent slip rates, magnitude and recurrence of the past earthquakes on them.