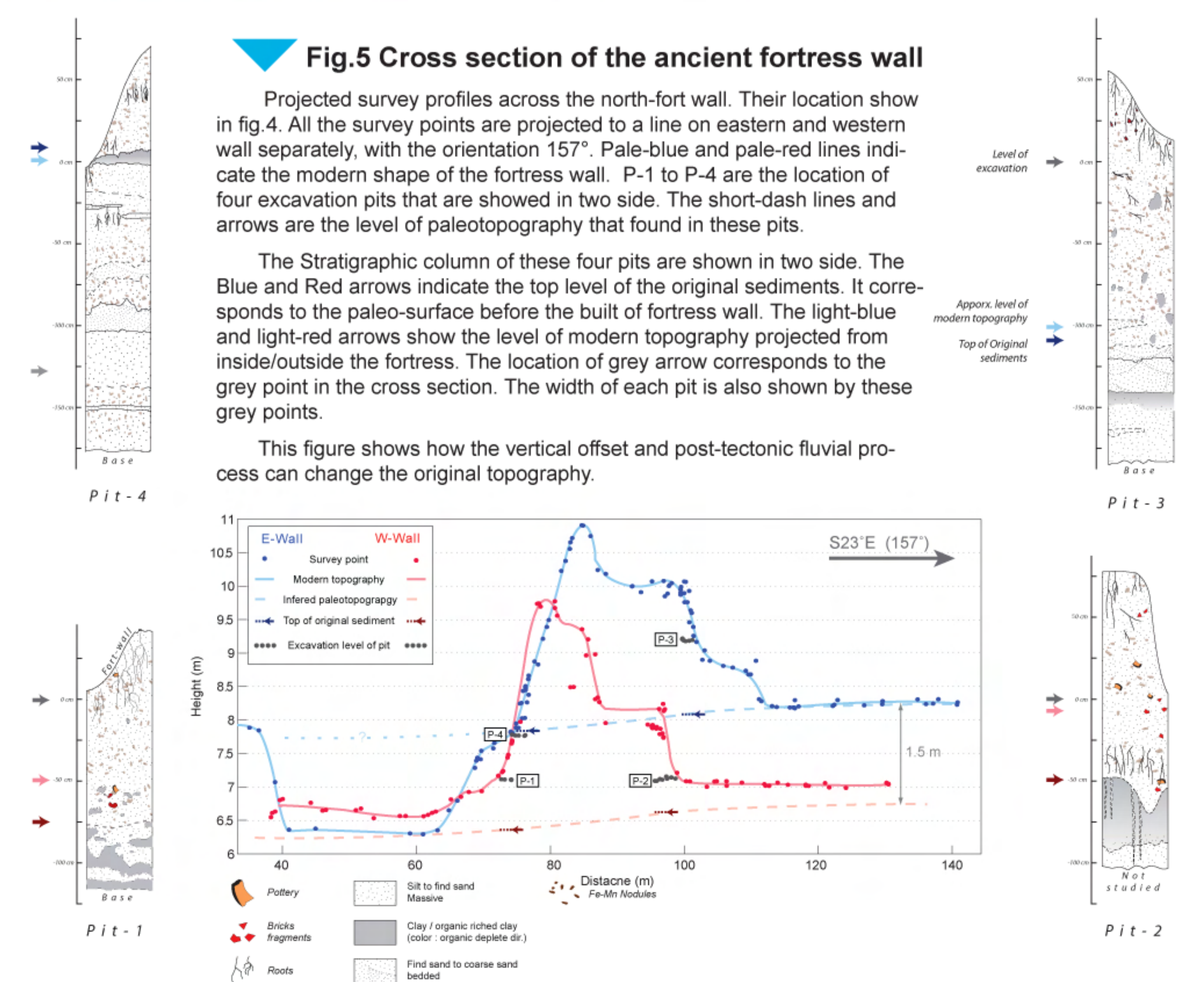
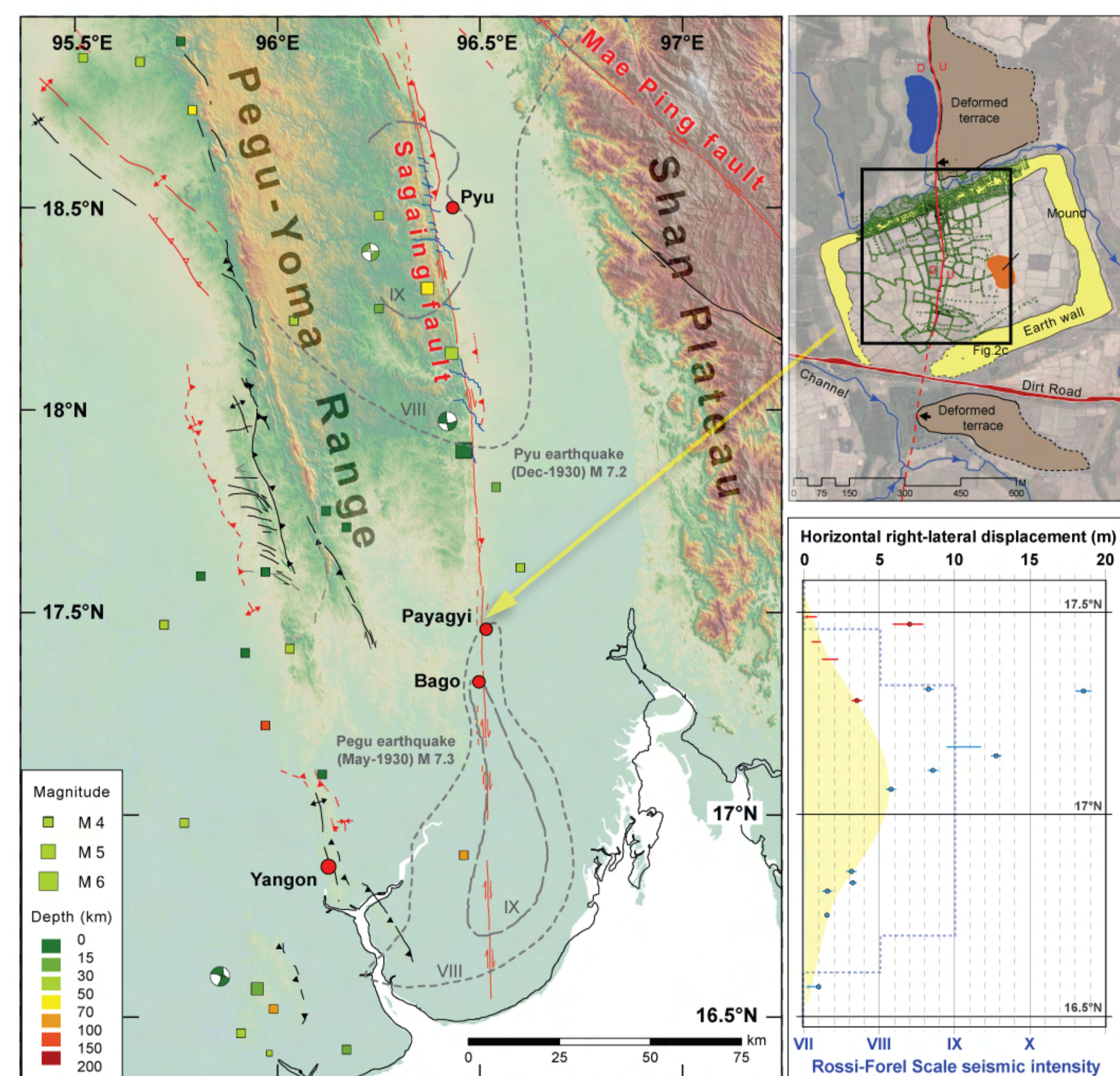


**Fig.2 Regional tectonic map in Southeast Asia**

Map shows active tectonic framework in SE Asia after Curry (2004). The black arrow is the Indian plate motion rate relative to the stable Sundaland block (Socquet et al., 2006). The GPS study suggests ~ 23 mm/yr of Indian plate motion is absorbed in the subduction zone, and 18 mm/yr in the Sagaing fault. The orange arrow shows the direction of full spreading rate in Central Andaman Basin (CAB) (Curry, 2004). It indicates the upper bound of the slip rate in the Sagaing fault.

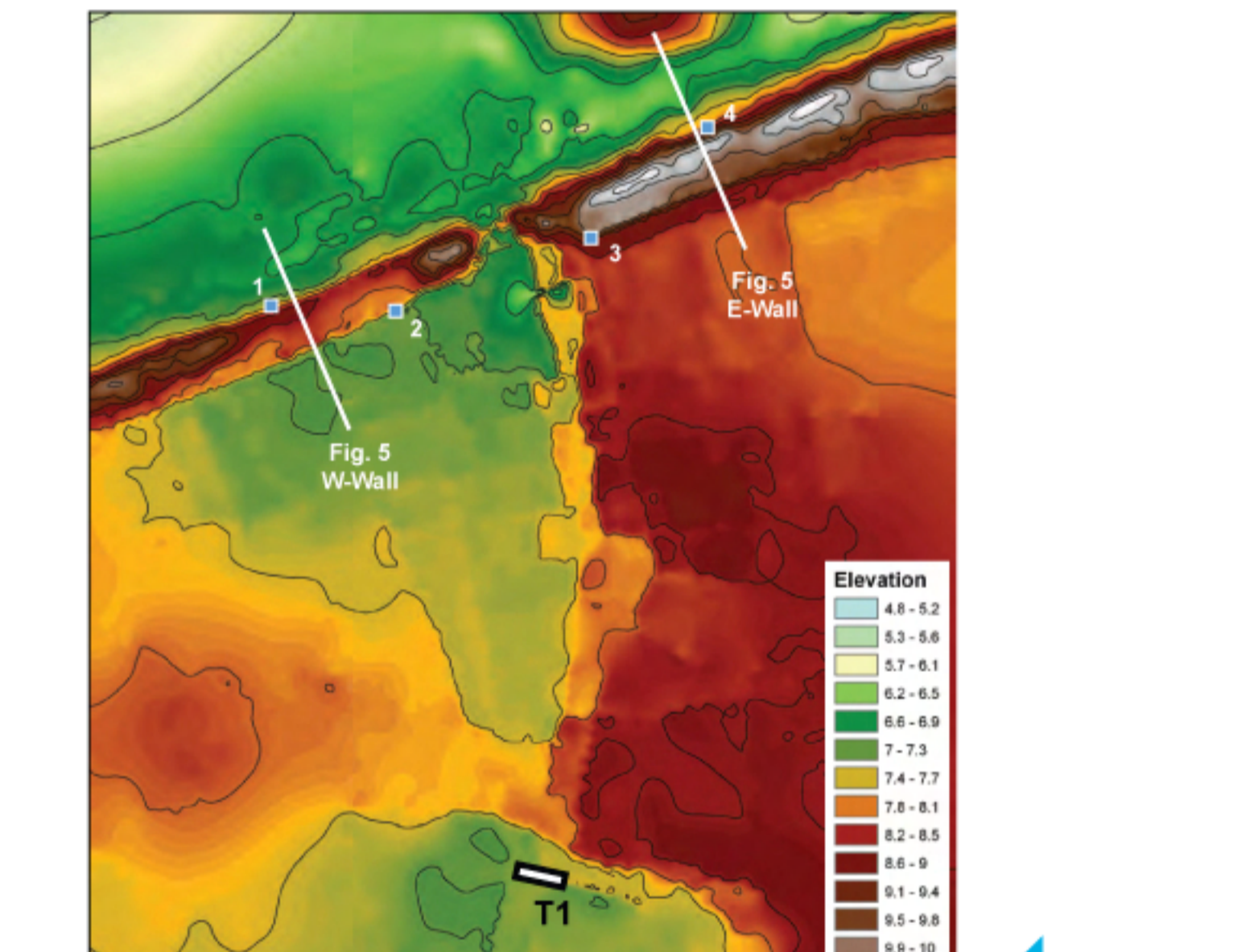
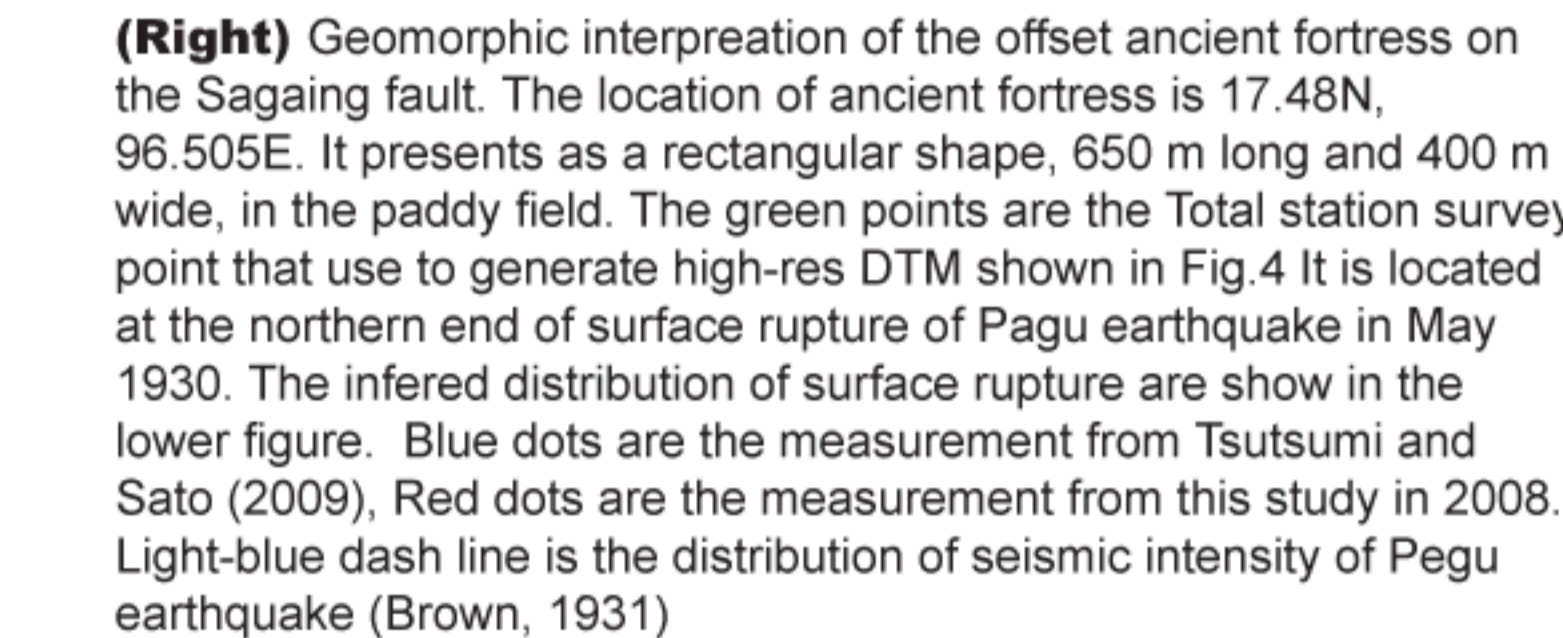
**This study focus on the active tectonics of two major right-lateral faults in the Myanmar area. Both of them generated strong earthquakes in the past century. The study on the southern Sagaing fault suggests the slip rate of Sagaing fault are nearly constant from north to south. It implies the strain from Andaman Sea opening must accumulate in the southern boundary of Burma plate, before it reaches to Sagaing fault. The study on the Kyaukkyan fault system reveals its complicate structural history and system, which may help us to understand to modern tectonic framework in this area.**

### Offset ancient fortress on southern Sagaing fault



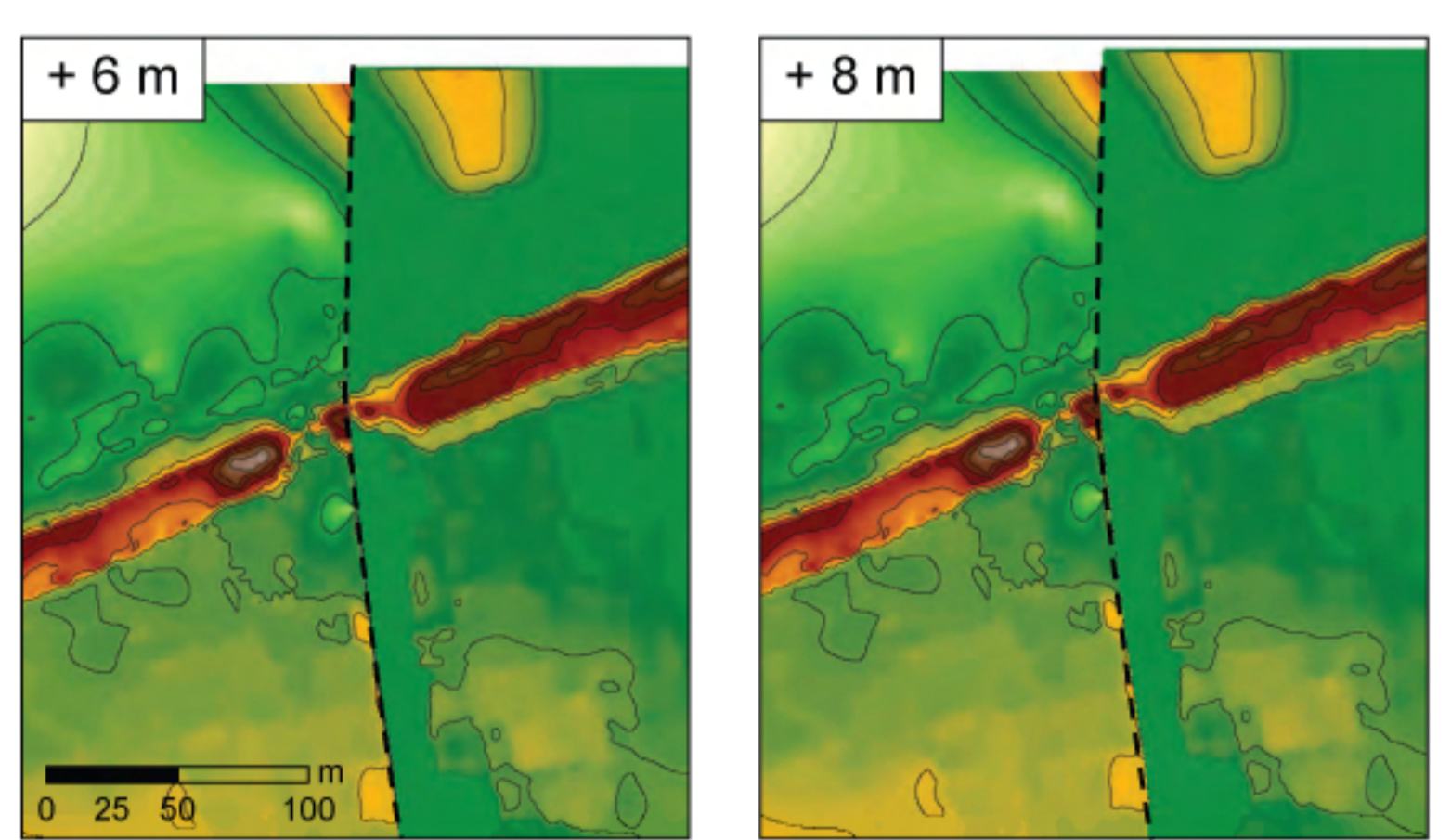
**Fig.3 A snapshot of earthquake geology in the southern Sagaing fault**

**(Left)** Active structures in the south central Myanmar. Identified active structures are shown in red. Blue lines indicate the offset stream across the fault. Colored squares are the epicenter of background seismicity from USGS/NEIC global earthquake catalog since 1973 C.E. Focal mechanisms are from Global CMT Catalog since 1976 C.E. Both colors represent their hypocenter depth. Grey dash lines are the boundary of high seismic intensity area during May-1930 Pegu earthquake and Dec-1930 Pyu earthquake (Brown, 1931; 1934). Roman numerals are in Rossi-Forel scale.  
**(Right)** Geomorphic interpretation of the offset ancient fortress on the Sagaing fault. The location of ancient fortress is 17.48N, 96.505E. It presents as a rectangular shape, 650 m long and 400 m wide, in the paddy field. The green points are the Total station survey point that use to generate high-res DTM shown in Fig.4 It is located at the northern end of surface rupture of Pagu earthquake in May 1930. The inferred distribution of surface rupture are show in the lower figure. Blue dots are the measurement from Tsutsumi and Sato (2009). Red dots are the measurement from this study in 2008. Light-blue dash line is the distribution of seismic intensity of Pegu earthquake (Brown, 1931)



**Fig.4 Digital terrain model (DTM) in the Payagyi ancient fortress.**

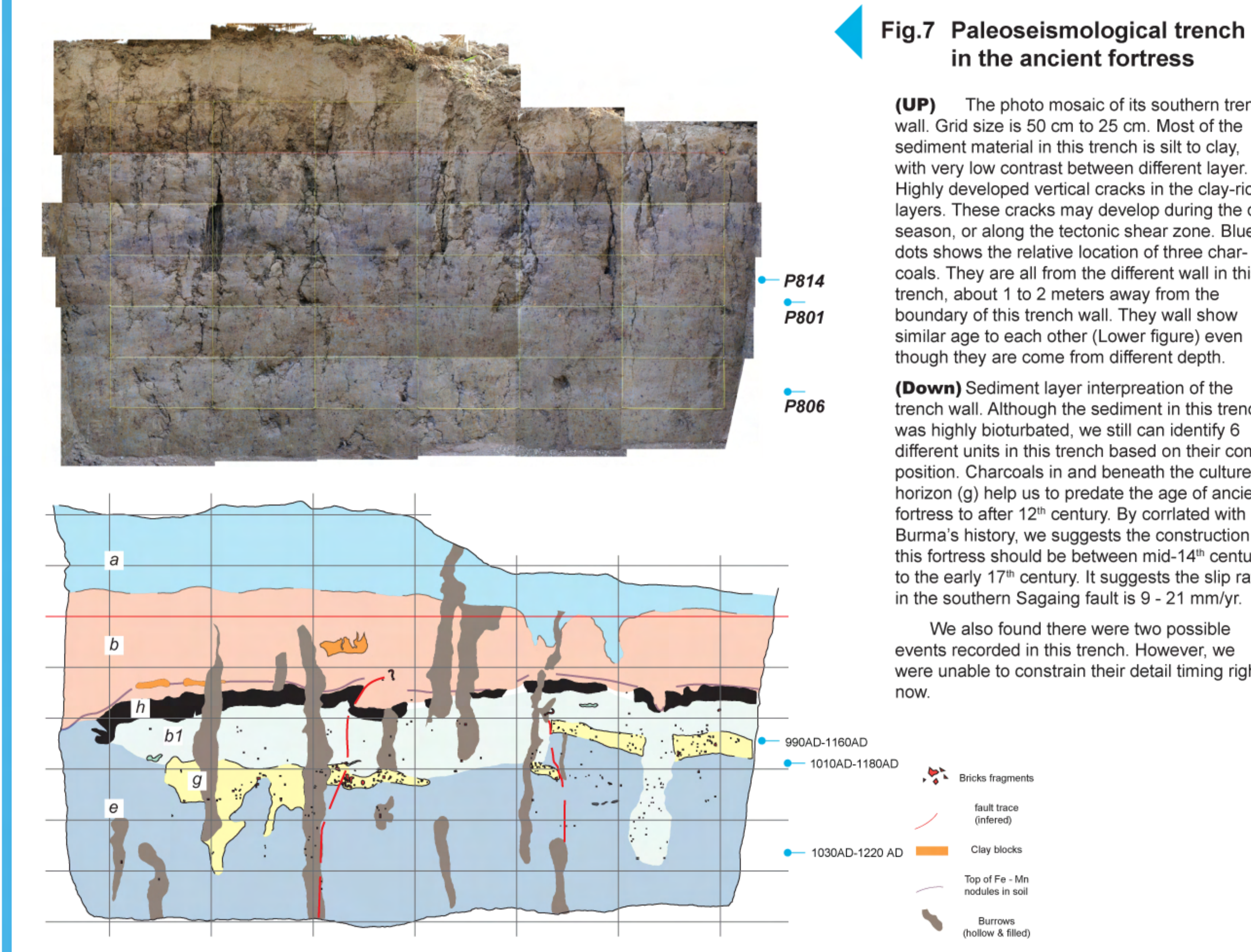
Its spatial resolution is 50 cm. The Sagaing fault's fault-line scarp is at the middle of this imagery. Blue squares are the location of our excavation site on the basis of earth-made fortress wall (Fig. 5). T1 is the location of the trench.



**Fig.6 3-D and 2-D restoration of the fortress wall**

The best estimation of horizontal offset on the fortress wall is 6 - 8 meters after remove the vertical topographical changes.

### Paleoseismology excavation



### Kyaukkyan Fault system and 1912 earthquake

