

Large-scale digital mapping of the Philippine fault zone based on aerial photograph interpretation:



Figure 1: Surface fault ruptures during the 1990 Luzon earthquake along the Digdig segment of the Philippine fault zone.

The 1,200-km-long Philippine fault zone (PFZ) is a major tectonic feature that transects the whole Philippine archipelago from northwestern Luzon to southeastern Mindanao. This arc-parallel, left-lateral strike slip fault is divided into several segments and has been the source of large-magnitude earthquakes in recent years, such as the 1973 Ragay Gulf earthquake (M 7.0), 1990 Luzon earthquake (Mw 7.7) (Figure 1), and 2003 Masbate earthquake (Ms 6.2). The high seismic risk posed by this fault zone requires a large-scale active faults map, a fundamental data set for seismic hazard mitigation.



Figure 2: Active faults map of San Jose City, Nueva Ecija.

Since 2003, Kyoto University and PHIVOLCS-DOST have been mapping the Philippine Fault.

At present, approximately **90% of on-land-stretch of the PFZ** has been mapped. This delineation is based on interpretation of available large-scale (at least 1:30,000) aerial photographs. In areas where there are no available aerial photographs, various satellite images are used to map the fault zone. The identified surface traces of the PFZ are then plotted onto 1:50,000 topographic maps published by NAMRIA and compiled using commonly used Geographic Information System (GIS) platforms such as MapInfo Professional and Generic Mapping Tool (GMT). These active faults maps are now available on this website and upon request to PHIVOLCS-DOST (Figure 2: example of active faults map).

This project is a work in progress; field mapping and paleoseismic investigation have been done along the left-stepping en echelon faults: San Manuel, San Jose, Digdig, and Gabaldon in Central Luzon and in Surigao [jeux de Voiture](#) [Dress Up Games](#) [Giochi di Calcio](#) fault and Compostela Valley area in Eastern Mindanao. On-going studies are now being done in Guinayangan, Infanta and the rest of Eastern Mindanao while detailed investigation will be conducted in Leyte and Masbate Islands in the future.

The authors have made reasonable efforts to ensure the accuracy of the maps based on available data. Acquisition of additional information and data sets in the future may however require revisions of these maps. ***Use of the active faults map in this website can be cited as:***

Tsutsumi, H. and Perez, J.S., 2013. Large-scale active fault map of the Philippine fault based on aerial photograph and interpretation. *Active Fault Research*, 39, 29-37.

{attachments}

Philippine fault zone maps:

1. [Northern Luzon](#)
2. [Central Luzon](#)
3. [Infanta](#)
4. [Guinayangan](#)
5. [Bondoc Peninsula](#)
6. [Masbate Island](#)
7. [Leyte Island](#)
8. [Eastern Mindanao](#)

