M6.4 Taiwan Earthquake of 05 February 2016

**Seismic Hazard**

In the Tectonic Setting, Taiwan lies near the junction of the Philippine Sea Plate and the Eurasian Plate, where the plates are subducting beneath the Philippine Sea plate. The subduction zone is marked by a sharp boundary, known as the Seattle Fault, that separates the two plates. This boundary is characterized by seismic activity and is a region of high seismic hazard.

**Earthquake Magnitude**

The earthquake had a magnitude of 6.4. The magnitude is a measure of the energy released by the earthquake and is used to assess the potential for damage and ground shaking.

**Earthquake Depth**

The earthquake occurred at a depth of 10 km. Earthquakes at shallower depths tend to cause more damage and ground shaking due to the proximity of the source to the surface.

**Did You Feel It?**

The National Earthquake Information Center (NEIC) provides a platform for individuals to report their felt shaking experience. This data helps in understanding the actual felt intensity at various locations and aids in assessing the impact of the earthquake.

**Tectonic Summary**

The 05 February 2016 M6.4 earthquake in southern Taiwan occurred as the result of oblique thrust faulting at shallow-mid crustal depths (~20 km). Fault mechanisms indicate rupture occurred on a fault oriented either north-northwest-southeast, and dipping shallowly to the northeast, or on a north-south striking structure dipping steeply to the east. Taiwan lies in a region of complex tectonics at the boundary between the Philippine Sea and Eurasian plates. To the north and east, the Philippine Sea plate subducts beneath Eurasia towards the northeast, along the Ryukyu Trench. South of the island, the Southeast Asian Plate (in the Taiwan area) subducts to the east beneath the Philippine Sea plate (Engdahl and Villaseñor, 2002). This plate boundary transition is anti-continent collision along the western side of Taiwan. At the location of the earthquake, the two plates converge in a north-northwest direction at a velocity of about 60 mm/yr.

Taiwan's seismic risk is high due to its location between two tectonic plates. The island has a history of large earthquakes, and the 2016 event was one of the more significant earthquakes recorded in the region. The earthquake caused damages and triggered landslides, with several reports of injuries and fatalities.

The EHB catalog (Engdahl et al., 1998) and the extensions (Engdahl and Villaseñor, 2002) are part of the plate tectonics and fault model used to understand the earthquake. The USGS, National Earthquake Information Center, and NOAA GEBCO and GLOBE Elevation Models provided the data sources for the map.

**Disclaimer**

The map is not approved for release by the Director USGS and should not be regarded as having official significance. It is provided for informational purposes and may contain inaccuracies.