CERAMAH TEKNIK TECHNICAL TALK

approximately 15 km north of Ranau, Sabah. The fact that the earthquakes have not yet inflicted any serious damage or collapse of buildings, historically, it should not be taken as an excuse for not considering the effects of earthquakes on the existing and future structures. Current design code for building structures in Malaysia widely adopts the British Standard (BS) 8110 code (BS 8110-1:1997) which has no provisions for earthquake-induced forces. In the interest of public safety, it is reasonable to comprehensively assess the seismic hazard and design of the region. Thus, the seismic hazard assessment provides Peak Ground Acceleration (PGA) values to all regions in Malaysia for Malaysia National Annex of EC8 (NA-MS EN1998), and developes seismic zoning map for Malaysia so that zones with non-seismic regions can be identified and zones with no special steel reinforcement detailing requirement can be specified. In EC8, zone 0 is specified for ground accelerations of 0.0g to 0.04 g and 0.04 g to 0.08 g for seismic zone 1. It can be concluded that about 90% of Peninsular and Sarawak fall into zone 0 and 1, without any special requirement for steel detailing, and generally about 40% of the regions is not required to design for seismic. In comparison among the 3 regions, the ratio of zone 0, zone 1 and zone 2 and higher, are as follows; Peninsular (45:45:10), Sabah (30:40:30), and Sarawak (70:20:10). The highest Peak Ground Acceleration (PGA) values covering sizeable regional areas of Peninsular, Sabah and Sarawak are 9%g, 16%g, and 9.5%g, respectively.

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New ocean bottom seismometer exploration for crustal imaging in Arctic Ocean

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Platform: Microsoft Teams

Due to the presence of ice floes, few studies have reported the velocity of crustal structures beneath the ultra-slow spreading ridge of Gakkel Ridge in the Arctic Ocean. In 2021, the "Joint Arctic Scientific Mid-Ocean Ridge Insight Expedition (JASMInE)" was conducted with international participation, utilizing the recently released Icebreaker "Xuelong 2" and innovative technology to adapt to concentrated sea ice. The expedition used 43 ocean bottom seismometer (OBS) deployments (42 recovered) at two profiles intersected at 85°E along and across the ridge axis, and a travel-time raytracing modeling method to derive P wave crustal velocity structures. The results show significant variations in crust thickness, from approximately 7.0 km beneath the 85°E volcanic spreading center to approximately 3.0 km beneath the surrounding non-volcanic zones.

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