Southeast Asia (SEA) is one of the most active tectonic regions on the planet due to its convergent setting, which accommodates rapid northward motion of the Indo-Australian plate and westward motion of the Philippines Sea plate. This activity gives rise to intense seismicity along the convergent plate margins in and around SEA, including the Sunda Arc, which wraps its way around the southern margin of the Indonesian archipelago.

Borneo is located at the centre of SEA, on the leading edge of the Sundaland block of the Eurasian plate, and exhibits lower rates of seismicity when compared to the surrounding regions due to its intraplate setting. Sulawesi, an island which lies adjacent to Borneo in the east, is characterised by intense seismicity due to multiple subduction zones in its vicinity. The tectonic relationship between the two islands is poorly understood, as is the provenance of their lithosphere, which may have Eurasian or East Gondwana origin.

The aim of this presentation is to showcase recent receiver function results from temporary and permanent broadband seismic stations in the region, which can be used to help improve our understanding of the structure of the crust and the mantle lithosphere beneath Borneo and Sulawesi. H-K stacking, receiver function migration and inversion are all applied in an effort to determine robust crustal thickness estimates and variations in shear wavespeed with depth. Our preliminary results from Borneo indicate that the crust beneath Sabah (northern Borneo), which is a post-subduction setting, appears to be much more complex than the rest of the island. Furthermore, we find that crustal thickness varies between different tectonic blocks defined from surface mapping, with the thinnest crust (24 km thick) occurring beneath Sarawak in the northwest.