

# CERAMAH TEKNIK TECHNICAL TALK

## The Sabah Melange and mass movement

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The above talk was delivered by P.Geol. Prof. Dr Baba Musta (UMS) on 12<sup>th</sup> July, 2023 via Zoom. Some 70 members participated. An abstract of the talk is given below:

**Abstract:** The term “melange” refers to the admixture of various sizes of rock, which are sheared and crushed in a finer grained matrix. Tectonic mélangé demonstrates the sheared rocks in the matrix with lithological units ruptured, producing separate blocks and a lack of stratal continuity. Aside from tectonic activity, the formation of melange was also due to the diapiric process. In this paper, we describe the distribution of Sabah melanges and how it connects to the mass movements at the outcrops along the main roadways. In Sabah, the mélanges were formerly known as the Garinono Formation, Kuamut Formation, Wariu Formation, Ayer Formation, and Chert-Spilitite Formation. Sabah mélanges contain various blocks of rocks from older formations, including amphibolite, serpentinite, schist, gabbro, spilite, chert, graywackes, limestone, and shale. The mechanical behaviour of rock mixtures composed of fragmented various lithologies surrounded by a weak clayey matrix is highly heterogeneous. Clayey soil behaviour in the matrix of mélangé is one of the most dominant problems that affects their poor performance and threatens the mass movements. The difference in parent rock and various matrix compositions has significant implications for the physico-chemical properties, engineering properties, and type of minerals, which are closely connected with the mass movement occurrences on the slope. The movement rate of slope should be monitored, and the surrounding area regularly investigated for the development of other potentially unstable sections of the mass movements. In addition, a full geotechnical characterization of all types of Sabah melange needs to be more thoroughly investigated. Therefore, it is highly recommended to do intensive geological mapping of Sabah to identify the distribution of Sabah melange.

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