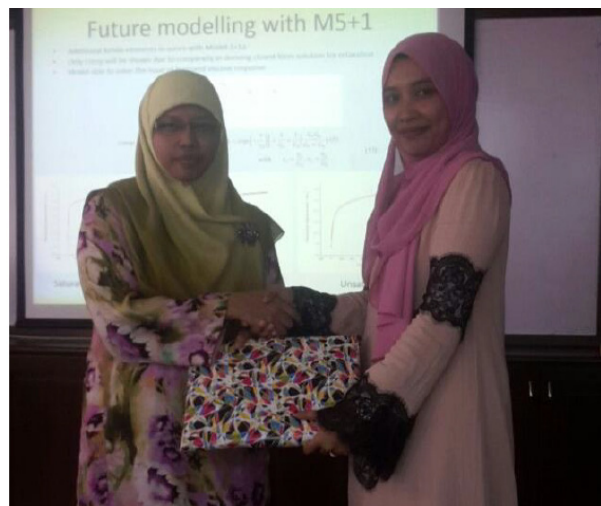


CERAMAH TEKNIK TECHNICAL TALK

Creep response in shear of clayey geo-materials under saturated and unsaturated conditions



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Abstract: Creep imposed many problems in landslides mitigation and remediation work as it causes slope to move at very slow rate and being hardly identified. Plane failure located along saturated soil layers is directly affected by the changes in positive pore water pressure in which they were greatly impact by the changes in its surrounding hydrology. The rise and fall of water table gives an adverse effect to the soil shear strength and this could lead to the onset of failure. To see how creep is affecting the deformability of landslides, we are looking from its kinematics point of view on how likely the presence of creep in shear could potentially trigger the movement of landslides and what are the contributing factors behind it. Several creep and relaxation test has been carried out on saturated and unsaturated clay samples by means of direct shear box. Each creep and relaxation test was performed by either measuring the evolution of movements in horizontal displacement or decay in shear stress. An attempt to visualize their response at qualitative level were made by selecting various analogue models from the combinations of spring and dashpot. These two components which exhibit elastic and viscous characteristics was a great medium to obtain good conceptual understanding of viscosity effects in soils from their simple mechanical response. Finally, we aimed to define creep and relaxation from only a single mechanical model by which the model must be coordinated to justify both responses of creep and relaxation with existing experimental parameters.