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The application of CAP-SASW method in determination of sub-surface profile of flexible taxiway in the airport (Conference Paper) [\(Open Access\)](#)

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Abstract

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In Malaysia, evaluating and assessing pavement condition always require destructive method such as field-cured cylinders and drilled cores from pavement. Not only these current practices are expensive and labor intensive, they are also may not represent in-place quality of pavement due to the in-situ conditions and site irregularities. In terms of the performance of the flexible pavement, the modulus and thickness of each layer in the pavement are the primary factors that associate with it. In-situ determination of these parameters is crucial, and non-destructive seismic method successfully alleviates the dependency on the destructive method. Utilizing Rayleigh wave propagation as its core element, the technology has proven its ability to obtain important parameters in pavement assessment and delineate the subsurface profile accurately. In this study, a non-destructive seismic method called Common Array Profiling Spectral Analysis of Surface Wave (CAP-SASW) was employed on flexible taxiway at Malaysia airport, as in a new, different configuration compared to the conventional SASW method. This method produces stiffness profile of the flexible pavement at airport taxiway. The inversion procedure is performed to obtain their thickness profile and results were compared with the existing methods such as Heavy Weight Deflectometer (HWD), Ground Penetrating Radar (GPR), Dynamic Cone penetrometer (DCP) and coring data. The pavement moduli are obtained with benefit from equation of Yoder and Witzack, and as for this surface wave technique, the moduli obtained are the small strain modulus. The value of elastic modulus obtained for every layer is also being compared to the modulus obtained from HWD method, which shows good comparison. © Published under licence by IOP Publishing Ltd.

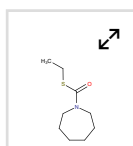
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