

Pavement evaluation is one of the foremost phases in all pavement engineering activities. In the backcalculation process, the researcher or the engineer varies the structural properties of the layers until the theoretical (calculated) deflections and the obtained (measured) deflections from FWD tests are closely matched to each other within a tolerable limit. However, this process is substantially time-consuming and poses some difficulties due to inherent inaccuracies in the results. In this study, synthetically derived deflections from a typical flexible pavement are used to estimate asphaltic concrete layer's elastic modulus, Poisson's ratio and thickness. Furthermore, artificial neural network (ANN) is utilized to determine the structural parameters, and it can be clearly seen that satisfactory results are obtained. ANN estimation of the three pavement layer characteristic parameters, that is, layer elastic modulus, Poisson's ratio and layer thickness, was carried out for the first time in the study.