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## **A MODEL TO PREDICT PERFORMANCE OF A HYBRID CAR IN KNOWN TRAFFIC CONDITIONS**

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In order to find out the fuel consumption of a vehicle for a known driving pattern, it is necessary to test it at the field which is costly. In this study, a computational model was developed to predict the fuel consumption of two hybrid vehicles when they are virtually travelled in Sri Lankan road conditions based on the known performance characteristics (series-parallel/ full hybrid) published by Argonne National Laboratory, USA. In this model, vehicle speeds were discretized and corresponding fuel rates at those intervals were predicted by considering the acceleration and the velocity. Finally, the hybrid vehicles were virtually travelled in different types of traffic conditions on a selected route and corresponding fuel consumptions were predicted. It was found that the fuel consumptions were very close to the real fuel consumptions of the vehicles tested for the same route. Therefore, if the performance characteristic of a vehicle is known, the fuel consumption for a given driving pattern can be accurately estimated using this model.