

ABSTRACT

Aspects of the disclosure relate to a system and a computer implemented method for monitoring operation of a vehicle, including: providing a trip dataset including time data, and accelerometer data obtained from an accelerometer configured to measure acceleration in 3 acceleration axes, wherein the accelerometer may be included in a mobile device being transported by the vehicle during data acquisition of the trip dataset, wherein the trip dataset corresponds to a vehicle trajectory; processing the trip dataset into a uniformly sampled dataset; producing gravitational vector direction data by determining a gravitational vector direction transforming the coordinates from the trip dataset from mobile device coordinates into vehicle coordinates; dividing the uniformly sampled dataset into a plurality of trip segments; for each trip segment of the plurality of trip segments, identifying one or more acceleration events by comparing the acceleration data of the trip segment with pre-determined thresholds; and reducing use of the vehicle.

FIG. 1