

A linear analysis of steady state curve traversing is developed for rail vehicle with wheels coupled with a torsional viscous damper. The governing equations are given and are solved numerically. We consider the equilibrium of the bogie with two wheel sets acted upon by the forces of gravity and the transverse force. The approach is based on providing guidance by creep forces in conjunction with wheel conicity, so that flange contact is normally avoided. It describes the behavior of the vehicle in the curves of different radii. It is, therefore, important to define the characteristics of the torsional damper. It gives the modulus (magnitude) of the moment of friction in the dampers produced by the relative motion of the wheels as well as the bogie yaw, the relative lateral and yaw displacement of the leading and trailing wheel set at each curve track of constant curvature