

Device for determining dynamic radius of wheel and tilt of mobile vehicle consists of a measuring unit and measuring sensors. The measuring unit contains at least one microcontroller; the measuring sensors include at least one distance sensor located on the outer or inner side of at least one wheel, opposite the center of the wheel, such that the center of the distance sensor lies on the horizontal axis of the wheel center, configured to obtain data on the distance between the horizontal axis of the wheel center and the ground to determine the dynamic radius of the wheel, at least one three-axis accelerometer, at least one three-axis gyroscope, at least one three-axis magnetometer, located at the center of mass of the mobile vehicle (O), configured to obtain data including the values of acceleration a_x , a_y , a_z , angular velocity ω_x , ω_y , ω_z , and the vertical component of the Earth magnetic field induction. In this case, the distance sensor, three-axis accelerometer, three-axis gyroscope, and the three-axis magnetometer are designed to transmit measured values to the microcontroller; the measuring unit is designed to combine the received measured values and, using the Madgwick filter, convert the acceleration values a_x , a_y , a_z , angular velocity ω_x , ω_y , ω_z , and the vertical component of the Earth's magnetic field induction into data on the wheel orientation angles in space α , β , γ , to determine the distance from the center of the mobile vehicle wheel to the distance sensor and the tilt angles of the mobile vehicle wheel vertical axis, correcting the values of the dynamic wheel radius obtained from the distance sensor depending on the determined distance from the center of the mobile vehicle wheel to the distance sensor, and on the determined angles α of the transverse tilt of the vertical axis of the mobile vehicle wheel, and β of the longitudinal tilt of the vertical axis of the mobile vehicle wheel.