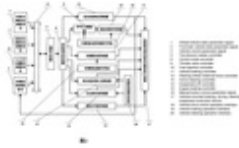
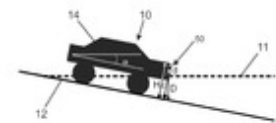


Patent families - 9 results

#	 	Title	Publication number	Publ. date	Applicant/Assignee			
1.		Automobile tire blowout security and stability control method	WO2019/218098	2019-11-21	LU BOYAN LU SHAN		100 %	
An automobile tire blowout security and stability control method, for use by manned and unmanned vehicles. The method consists of an automobile tire blowout security and stability control mode, model, and algorithm, a tire blowout control structure and procedure, a control program or software, and a control hardware. The method comprises: determining the tire blowout on the basis of the tire blowout state process, the real-time tire pressure, the detection tire pressure, the state tire pressure, or a steering mechanics state mode, creating wheel/vehicle tire blowout active control and human-computer interaction adaptive control modes according to tire blowout state points and tire blowout state periods, using a tire blowout control entrance/exit mechanism, switching between normal/tire blowout operating condition control modes, coordinating for performing vehicle braking, driving, steering, steering wheel rotational force, and suspension balance control, and implementing tire blowout control on the tire blowout operating condition and overlapping real/unreal tire blowout processes. The method relates to controlling the configured information unit, tire blowout controller, electric control unit, program software, and execution device on the basis of the tire blowout, overcomes the technical barrier of difficulty to control due to the serious unstability of a wheel/vehicle and the extreme tire blowout state under the condition that the tire blowout process state, the tire blowout wheel motion state, and the vehicle driving attitude suddenly change, and solves the technical problem of the automobile tire blowout security.								
2.		Wheeled vehicles tire pressure control system for air, and equipment in combination with wheel trailer vehicle speed sensing and detection	DE202011051293	2012-04-12	STROTMANN GEORG		75 %	
Expansion of a tire pressure control system, the changes in a tire during or, characterized in, that the following points and changes CAN be made: 1.) load sensors detecting the wheel or a combination thereof or one of the following sensors: load cell, strain gauges, pressure in the air to the air bladders detection axle suspension of the hydraulic oil pressures or axle suspension; detecting the distance from the frame to the ground, and the road or the axis; means of spring systems detect the spring 2.) and/or external sensors with on-board speed detection. 3) or one of the speed detection methods or by a combination of these sensors: vehicle speed detection for CAN bus, the speed of a GPS signal detection, vehicle speed cruise speed sensors for detecting the radar transmission by measuring the wheel; 4 or laser speed detection of ultrasound.) in the tire characteristic regulator control and/or tire table for the particular tire...								
3.		Smart active tyre pressure optimising system that acts in inevitable critical situations to enhance emergency breaking efficiency, mitigate-loss of traction, stability, roll over, hydroplaning, puncture, over & under steering	IN726CH2013	2015-08-14	PRASAD MUTHUKUMAR		71 %	
'Smart Active Tyre Pressure Optimising System [TPOS] 102 is a highly time sensitive design and technique that instantaneously sense and controls the tire pressure particularly in imminent and inevitable critical driving situations to reduce emergency & high speed breaking distance, mitigate - loss of traction, hydroplaning, roll over or loss of stability, over & under steering, break failure, loss of control due to puncture by smartly sensing, perform context aware computing and directing the Tyre Pressure Control Units [TPCU] 104 to instantaneously control the tyre pressure in right time with right pressure on right tyres thereby actively controlling the footprint and sidewall deformation rate to enhance traction & stability simultaneously sustaining drivability or steerability ultimately to avoid or reduce the impact of collusion and overcome or mitigate critical situations for protecting the vehicles, occupants, pedestrians and other objects around or on the way; also according to design, configurations and scenarios the system instantaneously optimises the tyre pressure on all tyres for further safe driving till next restoration else restores the pressure to optimum preset value utilising inbuilt reservoir or other external restoration systems immediately after the vehicle overcomes the critical situation to continue with safe and comfortable driving. In critical situations TPOS performs sensing, pre computing, current computing for controlling the tire pressure during critical situation, post computing to optimise tire pressure after overcoming accordingly. TPOS 102 utilise smart and adaptive closed loop processing algorithm with predetermined and tested lookup table to instantaneously check and compare the effects between predetermined and tested real world scenarios to the actual real world scenarios for actively sensing, computing and controlling the tire pressure accordingly to mitigate the critical situations. The controlling of tyre pressure is computed mainly based on parameters comprising of sensor system, vehicle safety and stability systems, nature of breaking & break force distribution, tires upper & lower cut-off pressure values, sensing reservoirs and tires internal & external pressure, temperature, moisture, humidity, wheel & tire specifications, vehicle & wheel speed, acceleration & deceleration, vehicle orientation & axial rotation, transverse motion & lateral acceleration, tires position or angle of attack, load & torque distribution, tire traction, steering position, cornering effects, change in Centre of gravity, over & under steering, hydroplaning, sensing road conditions, etc and to further enhance the efficiency, the system interoperates with vehicles existing safety and stability systems like ABS, EBD, ESC, TCS, Rollover mitigation systems, ECU, BA, Precrash systems, suspension & vertical dynamics, radar assisted auto breaking, cruise control system, aerodynamics & airbrakes etc. Other aspects of present invention are controlling the tire temperature according to environmental temperature, moisture and humidity thereby to enhance traction and vary tire pressure according to change in centre of gravity & load, driving modes - comfort, standard and sports modes. FIG1								

4.	Smart active tyre pressure optimising system	WO2013/114388	2013-08-08	PRASAD MUTHUKUMAR	70 %
A Smart Active Tyre Pressure Optimising System (SATPOS) comprising of Tyre Pressure Optimising System (TPOS) (102) and Tyre Pressure Control Units (TPCU) (104). SATPOS is a highly time sensitive design and technique that instantaneously senses and controls the tyre pressure particularly in imminent and inevitable critical driving situations to reduce emergency & high speed breaking distance, mitigate-loss of traction, hydroplaning, roll over or loss of stability, over & under steering, loss of control due to puncture by smartly sensing, perform context aware computing and directing the TPCU (104) to instantaneously control the tyre pressure in right time with right pressure on right tyres. TPOS (102) performs sensing, pre-computing, current computing for controlling the tyre pressure during critical situation, post computing to optimise tyre pressure after overcoming accordingly. SATPOS enhances vehicle traction and stability in critical driving situations.					
5.	Robust tire forces estimation system	EP3153375	2017-04-12	GOODYEAR TIRE & RUBBER	69 %
A tire state estimation system is provided for estimating normal force, lateral force and longitudinal forces based on CAN-bus accessible sensor inputs; the normal force estimator generating the normal force estimation from a summation of longitudinal load transfer, lateral load transfer and static normal force using as inputs lateral acceleration, longitudinal acceleration and roll angle derived from the input sensor data; the lateral force estimator estimating lateral force using as inputs measured lateral acceleration, longitudinal acceleration and yaw rate; and the longitudinal force estimator estimating the longitudinal force using as inputs wheel angular speed and drive/brake torque derived from the input sensor data.					
6.	Movable tyre test bench and implementing method therefor	EP1714130	2006-10-25	AIRBUS OPERATIONS AIRBUS	68 %
The present invention relates to a movable tyre test bench consisting of a self-propelled platform (10) capable of travelling along straight and circular paths, and including an instrumented module (11) for testing a wheel/tyre assembly (12) to be tested, whereby said assembly can be turned to face in any direction, tilted and subjected to a vertical force; first steerable axles provided with suspensions and drive wheels; a processing unit (15) combined with memory means (16); and means (21) for monitoring the test cycle, the position of the assembly and the force exerted thereon.					
7.	Procede pour predire l'usure d'un pneumatique et systeme pour sa mise en oeuvre	EP1639340	2006-03-29	MICHELIN RECHERCHE & TECHNIQUE MICHELIN	68 %
The invention relates to a method for predicting the wear of a pneumatic tire comprising tread designs, involving the following successive steps: (i) obtaining, with each rotation of the wheel or at given time intervals, wheel characteristics (41) relative to at least one wheel comprising the efforts applied to the center of this wheel in the longitudinal, transversal, vertical directions and cambers gamma and derivative delta ; (ii) processing the wheel characteristics (41) in connection with the parameters (51) of the pneumatic tire in order to obtain, with each rotation of the wheel or at said time intervals, contact characteristics (61) of the tread designs characterizing the contact area of the pneumatic tire with the ground that are representative of the efforts applied to each tread design in the longitudinal, transversal and vertical directions; (iii) processing the contact characteristics (61) in order to predict the instantaneous wear characteristics (71) that are representative of the wear of each tread design with each rotation of the wheel or at said intervals, and adding the instantaneous characteristics over a given period in order to obtain, for each tread design, cumulative predicted wear characteristics; (iv) a measure, effected at a given instant, of at least one cumulative real wear characteristic (82) of the pneumatic tire on at least one of the tread designs or, on average, on an axial section of the pneumatic tire; (v) a comparison of at least one of the cumulative predicted characteristics (72) obtained in (iii) with the corresponding real characteristic (82) measured in (iv), and; (vi) taking into account the result of the comparison effected in (v) for realizing a new prediction cycle of corrected instantaneous and cumulative wear characteristics.					

A vehicle (100) comprises a plurality of water level sensors, for example comprising capacitive or resistive sensors, from the outputs of which can be determined vehicle orientation when wading. In conjunction with a vehicle orientation sensor, the outputs from any one water level sensor permits calculation of water depth at any point on the vehicle body.



A method for estimating a tire state including normal force, lateral force, and longitudinal force on a tire mounted to a wheel and supporting a vehicle is disclosed. The method comprises: accessing a vehicle CAN-bus for vehicle sensor-measured information; equipping the vehicle with a plurality of CAN-bus accessible, vehicle mounted sensors providing by the CAN-bus input sensor data, the input sensor data including acceleration and one or more angular velocities, steering wheel angle measurement, angular wheel speed of the wheel, roll rate, pitch rate, and yaw rate; deploying a normal force estimator operable to estimate a normal force on the tire from a summation of longitudinal load transfer, lateral load transfer and static normal force using as inputs lateral acceleration, longitudinal acceleration and roll angle derived from the input sensor data; deploying a lateral force estimator operable to estimate a lateral force on the tire from a planar vehicle model using as inputs measured lateral acceleration, longitudinal acceleration and yaw rate derived from the input sensor data; and deploying a longitudinal force estimator operable to estimate a longitudinal force on the tire from a wheel rotational dynamics model using as inputs wheel angular speed and drive/brake torque derived from the input sensor data.

