Adaptation of "Roof Flaps" to Sedan Body Cars To Increase the Probability of Regaining Control at High Speeds

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Speed is a great factor to take into account at the time of an accident, since with only a 1% increase in speed the probability of fatal accidents increases by 4% and that of accidents with traumatisms by 3%. The low aerodynamic load of some cars does not help to regain control of these and the "ABS" and "TCS" are not enough. It is proposed to implement the "Roof flaps" to increase safety during accidents. If “Roof Flaps” are adapted in a sedan body car with supercharged Hemi 6.2L V8 engine, then the car will slow down and not raise the tires off the ground increasing the probability of regaining control at high speeds. An RC was used, which was modified by placing 3 "Roof flaps". To test the effectiveness of these a maneuver was made; Auto Control was set by accelerating and passing to the left of one cone, then at the next cone making a sharp right turn, then another sharp left turn. The procedure was repeated 5 times and 5 times in reverse with each car. The Experimental Auto regained control 0.21s (9.68%) faster and 0.16m (13.56%) sooner on average than the Auto Control. The data shows that the difference in speed between the cars was not significant (0.03m/s, 2.43% slower). The Experimental Auto regained control in less time and distance than the Auto Control. It is expected to work with other RC scales such as 1:24 or 1:10 and 3D digitization to adapt it to real cars.

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