

Highlights for the paper:

The Rollover Risk Delta Tricycles: a New Rollover Index and its Robust Mitigation by Rear Differential Braking

- Although the Rollover Index (RI) is found in the regulations, the dynamics of a 3-wheel vehicle in delta configuration differs considerably from that in a 4-wheel vehicle and its modelling is not a trivial task; the estimation of the rollover index by simple sensing devices is presented in this article.
- In this paper is presented a Lyapunov-based analysis to prove rigorously that the RI stability margin is enlarged with differential braking even against (bounded) parameter changes.
- The performance of a rear differential braking device for rollover mitigation, is illustrated by the widely recognized vehicle simulation software CarSim.