

# Optimization of suspension design for a novel bike

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## ABSTRACT

In this era of the energy slowly exhaustion problem and energy alternative, the domestic and overseas factories have an orientation towards energy saving, carbon reduction and energy alternative based on government subvention. This paper focuses on research the motorcycle's suspension optimization. This research uses SolidWorks to build up the whole motorcycle's model, its suspension; we also discuss up the suspension's lever ratio and spring ratio in this study. The simulation result via BikeSim is used to solve the optimization using Multi-objective Genetic Algorithms. The optimal solution of the shock absorber is used to make the motorcycle have the better comfort and safety.

Keywords : lever ratio、 Multi-objective Genetic Algorithms、 comfortableness、 safety

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