# On the Practice of Anti-lock Brake System for Motorcycles


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**ABSTRACT**

Compared with passenger cars,there ar more problems on motocycle braking control.When the wheels are locked,the motocycle will slide and sideslip easily.And,due to its higher location center of mass,it will sidespin and result in turnover.Moreover,the limted space and lower power supply make the ABS system less popular used on motocycles. In this project,we designed an mini ABS braking regulation circuit and mechanism that is feasible for motocycles.The developed ABS circuit will be installed in a real motocycle and tested on the simulative platform running. We have 2 sessions for this research： 1. Design an ABS mechanism and verify its performance To reduce the space occupid by ABS unit,we replaced the air/hydraulic power sink by solenoid actuator using electrical power.The self-design ABS regulation circuit will be driven by the solenoid directly to brake and release the ABS system.Not only it can lower the cost and minimize the energy consumption in the actuator,also it increases the efficiency of energy transformation,and improve the system response. 2. Dynamic platform-runniog test for the ABS system The developed ABS system and fuzzy controller in the formerstep will be installed in a real motocycle and proceed platform-funning test.We can modify the controller parameters from the accurate testing data and obiectively ensure the feasibility of the developed ABS system. By carring out this research,we hope a high-speed,high-efficiency and low-cost ABS braking system on motocycles can be developed and become popular to improve the safety of motocycle riding.



Keywords : ABS(Antilock Brake System) ; motorcycle ; brake mechanism ; fuzzy logic control ; solenoid coil ; oil hydraulic


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