The influences of worn shock absorber on ABS braking performance on rough road

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Abstract: In this study, the influence of the deteriorations occurring in damping capacity of the shock absorber on the braking performance of Anti-Lock Brake System (ABS) was experimentally investigated. For this, ABS tests were conducted on the rough road, which has $\mu$-split and slippery surface by using worn and new shock absorbers. The results show that when ABS is activated, the brake pressure fluctuations are affected by the changes in shock absorber damping capacity. Accordingly, it is determined that the braking performance is deteriorated by both road surfaces with worn shock absorbers. The $\mu$-split rough road condition with new shock absorber improves braking performance, whereas the slippery road condition makes this braking performance much worse.

Keywords: ABS; anti-lock brake system; suspension system; worn shock absorber; rough road.


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