

## **A CONTRIBUTION TO DESIGN OF SEMIACTIVE VEHICLE SUSPENSION SYSTEM**

### **Authors**

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### **Abstract**

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Suspension systems have great influence on vehicle characteristics, especially ride comfort and handling. Classical suspension systems may only offer a compromise among requirements for ride comfort and vehicle handling in a narrow range of service conditions. Better characteristics are provided by application of suspension systems with controlled characteristics: semiactive and active systems. Active suspension systems introduce special force generators, power demanding, so as to obtain favourable characteristics. Their prices are fairly high, so that the application may take place in high vehicle class. Semiactive suspension is based on control of spring characteristics, or, more often, damping characteristics, providing acceptable output characteristics for medium and high class vehicles. Therefore, this paper will mostly deal with the design of semiactive suspension systems, based on control of damping parameters. A method of »stochastic parameters optimization« has been utilized for the optimization of parameters of semiactive suspension. The optimization objective was a simultaneous minimization of sprung mass vibration and standard deviation of dynamic ground reactions.

### **Keywords**

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**vehicle, suspension, comfort, semiactive system, optimization**