

Engineers develop better car suspension

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Purdue University mechanical engineers have demonstrated a new method for analyzing the components of automotive suspension systems.

The researchers say their method can be used to show precisely how a part's performance is changed by damage and how that change affects other parts in the suspension.

The approach represents a potentially major change in how automotive suspension systems will be designed in the future, said Douglas Adams, an associate professor of mechanical engineering who is leading the research.

"The way it's done now is that each of the parts making up the suspension are manufactured to be as rugged as possible," Adams said. "Usually, different suppliers provide the different components.

"The problem with this approach is that some of the parts are over-engineered and heavier than they need to be because they are designed to withstand greater forces than they will encounter once they are integrated into the system. This results in a heavy suspension system that doesn't handle very well, and higher fuel and steel consumption than you would like."

The research is detailed in a paper being presented Wednesday during the International Mechanical Engineering Congress and Exposition in Orlando, Fla.

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