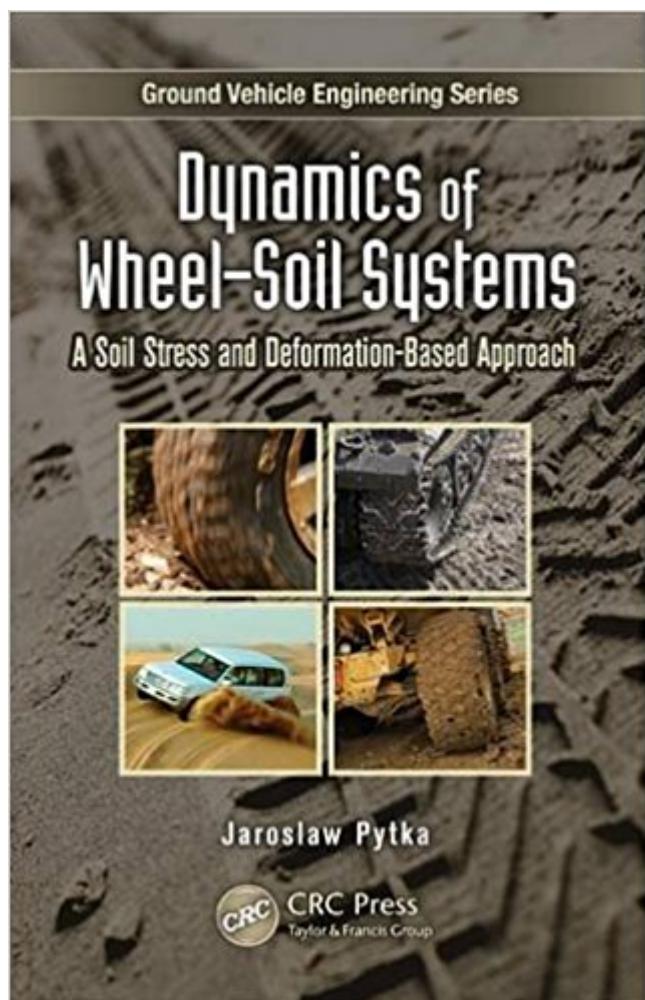


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# Dynamics Of Wheel-Soil Systems: A Soil Stress And Deformation-Based Approach (Ground Vehicle Engineering)



## Synopsis

Why is knowledge of soil stress and deformation state important for off-road locomotion? How do you measure soil stress and deformation under wheel loads? What are the actual values of stresses and deformation in soil or snow under a passing wheel? Providing answers to these questions and more, *Dynamics of Wheel-Soil Systems: A Soil Stress and Deformation-Based Approach* is a practical reference for anyone who works with experiment design and data analysis of soil stress and deformation measurements under vehicle load. Based on the author's 15 years of experience in field experimentation on wheel-soil dynamics, the book describes methods and devices for soil stress and deformation measurements and presents numerical data from full-scale field experiments. These methods offer practical solutions to methodological problems that may arise during the design and preparation of field experiments. Provides technical information on measuring, modeling, and optimizing off-road vehicle traction—including a novel method for describing off-road traction. Provides rare experimental data on soil stress and deformation under a variety of wheeled and tracked vehicles. Supplies solutions for designing, building, and using soil or snow pressure transducers and sensors. Compiles original experimental data on soil degradation due to agricultural machinery traffic and soil compaction. Explains how to create dynamic models of wheel-soil systems based on experimental data. A valuable reference on an important area of terramechanics, this book shows how to analyze and model wheel-soil interactions to create more effective designs for a range of vehicle types.

## Book Information

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## Customer Reviews

Jaroslaw Alexander Pytka is a research engineer and instructor of undergraduate and graduate students of automotive technology at the Lublin University of Technology, Poland. Dr. Pytka earned an MS in automotive technology from the Lublin University of Technology in 1992, and a Ph.D. in soil physics from the Institute of Agrophysics in Lublin. His major research interest is wheelÃ¢â€œsoil interaction analysis with a focus on experimental studies. Dr. Pytka has authored or coauthored more than 50 papers and is a reviewer for the Journal of Terramechanics.

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