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Two models for tire wheel traction performance prediction

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The paper presents some comparative results for two wheel traction models and experimental data. The traction models were applied to a romanian U650 tractor. In both models, tire deflection under load was taken into account by replacing the real wheel with an imaginary one, with a larger radius rd > r0.
Complete soil rebound was taken into account for the first model and incomplete soil rebound was considered for the second model. A variable shear area, depending upon wheel slip, was also taken into account for some variants. A comparative analysis between the calculated net traction force and traction efficiency and experimental data has shown that the best fit with experimental data is given by the first model, when variable shear area is taken into account.