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Jingbo Dou, Department of Mathematics, University of Oklahoma, Norman, OK 73019, and
Meijun Zhu* (mzhu@ou.edu), Department of Mathematics, University of Oklahoma, Norman,
OK 73019. *On one dimensional nonlinear equations with negative exponents.*

In this talk I will present various existence results for nonlinear differential equations related to L_p Minkowski problem in the plane as well as to Micro-Electromechanical System (MEMS) model. In particular, the case of $p < -2$ for L_p Minkowski problem with sign-changed data is addressed. Some new inequalities on periodic functions are also obtained. This is a joint work with Jingbo Dou. (Received September 19, 2011)