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Yanzhao Cao (yzc0009@auburn.edu), Department of Mathematics and Statistics, 221 Parker Hall, Auburn University, Auburn, AL 36849, and A. J. Meir* (ajm@auburn.edu), Department of Mathematics and Statistics, 221 Parker Hall, Auburn University, Auburn, AL 36849. Steady Flow in a Deformable Porous Medium.

In this work we study a model for steady fluid flow in a deformable (elastic) porous medium. The model which was developed in the context of modeling one of the processes in paper production is distinguished in its use of a Kozeny-Carman type relation for the fluid's permeability, resulting in a quasilinear elliptic system. (Received January 25, 2010)