1084-35-65 **Thinh T Kieu*** (thinh.kieu@ttu.edu), 4306 16th Street, Quaker Pines Apt #5, Lubbock, TX 79416, **Akif Ibragimov** (akif.ibraguimov@ttu.edu), Department of Mathmatics and Statistics, Texa, Lubbock, TX 79409, and **Luan T Hoang** (luan.hoang@ttu.edu), Department of Mathmatics and Statistics, Texa, Lubbock, TX 79409. *Stability of solutions to generalized Forchheimer equations of any degree.*

The nonlinear Forchheimer equations are considered as laws of hydrodynamics in porous media in case of high Renolds numbers, when the fluid flows deviate from the ubiquitous Darcy's law. In this article, we study the generalized Forchheimer equations for slightly compressible fluids.

The bounds for their solutions are established in L^α-norm for all $\alpha \geq 1$. We prove that the solutions depend continuously on the boundary data on both at finite time and time infinity. The related long-time dynamics results obtained here are for general L^α-spaces.

New Poincaré-Sobolev inequalities and nonlinear Gronwall-type estimates for nonlinear differential inequalities are utilized to achieve better asymptotic bounds.

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