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Zachary Denton* (zhdenton@gmail.com), Mathematics Department, University of Louisiana at Lafayette, P.O. Box 41010, Lafayette, LA 70504, and **Aghalaya Vatsala**. *Generalized Quasilinearization Method for Nonlinear Riemann-Liouville Fractional Differential Equations*. Preliminary report.

Existence and comparison results of the linear and nonlinear Riemann-Liouville fractional differential equations and systems of order q , $0 < q < 1$, are recalled, modified, and developed where necessary. Generalized quasilinearization method is developed for nonlinear fractional differential equations of order q where the nonlinear function $f(t, x)$ can be split into two functions, one convex and one concave. Quadratic convergence to the unique solution is proved via weighted sequences. (Received September 16, 2011)