1125-35-1939   **Joyce R. McLaughlin*** (`mclauj@rpi.edu`), 110 8th Street, Troy, NY 12180-3590. *Unique Continuation, Uniqueness and Optimization for Viscoelastic Models.* Preliminary report.

In Biomechanical Imaging of tissue and Imaging in geophysics, viscoelastic models are used in order for the mathematical models: (1) to accurately predict the data; and (2) given the data, to enable the imaging functional to accurately compute biomechanical properties of tissue of physical properties of the earth. The mathematical structure of these integro-differential operators, in the time/space domain or in the frequency domain, have new properties. We present unique continuation and uniqueness results in the time/space domain and optimization results in the frequency domain. (Received September 19, 2016)