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Investigation of characteristic times, thixotropy and reversibility of the magnetorheological effect for a magnetorheological fluid

Author: Alexandru Firu¹

Co-author: Daniela Susan-Resiga²

¹ *West University of Timișoara, Faculty of Physics and Mathematics, Romania*

² *West University of Timișoara, Faculty of Physics and Mathematics, Romania; Center for Fundamental and Advanced Technical Research, Romanian Academy-Timisoara Branch, Romania*

The paper focuses mainly on the experimental study of two characteristic times: the retardation time of the elastic response and the relaxation time of a commercial magnetorheological suspension as functions of the applied magnetic field and temperature. For practical applications these characteristic times are as important as the response time to the application of a magnetic field. However, to our best knowledge, the two characteristic times were not investigated in detail before. Also, the thixotropy and reversibility of the magnetoviscous effect, which are also important for practical applications, are evaluated in the paper.

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