

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

New analysis method for passive microrheology KENGO NISHI, CHRISTOPH SCHMIDT, Univ Goettingen, FRED MACKINTOSH, Vrije Universiteit — Passive microrheology is an experimental technique used to measure the mechanical response of materials from the fluctuations of micron-sized beads embedded in the medium. Microrheology is well suited to study rheological properties of materials that are difficult to obtain in larger amounts and also of materials inside of single cells. In one common approach, one uses the fluctuation-dissipation theorem to obtain the imaginary part of the material response function from the power spectral density of bead displacement fluctuations, while the real part of the response function is calculated using a Kramers-Kronig integral. The high-frequency cut-off of this integral strongly affects the real part of the response function in the high frequency region. Here, we discuss how to obtain more accurate values of the real part of the response function by an alternative method using autocorrelation functions.

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Date submitted: 24 Nov 2015

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