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Fast and slow ultrasonic group velocities in aqueous suspensions of polymer microspheres ROBERT HEITHAUS, Dept. of Physics, Univ. of Mississippi, JOEL MOBLEY, National Center for Physical Acoustics, and Dept. of Physics, Univ. of Mississippi — Suspensions of narrowly sized polymer microspheres can exert surprisingly large dispersive effects on through-transmitted ultrasonic wavepackets. In a recent set of experiments, the transmission of arbitrarily large and negative group velocities were observed in an aqueous suspension of 160 μm diameter spheres at a volume fraction of 3%. In this talk, we report on both broadband and narrowband measurements of the phase and group velocity spectra in these media, including the observation of superluminal, negative and abnormally slow group speeds.

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