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Propagation of particle-displacement waves in linear arrays of particles in Poiseuille flow between two parallel walls[1] MATTHEW BARON, JERZY BLAWZDZIEWICZ, Yale University, ELIGIUSZ WAJNRYB, IPPT PAN, Warsaw, Poland — A spherical particle subject to an incident Poiseuille flow in a narrow parallel-wall channel produces a disturbance flow corresponding to a two-dimensional harmonic-pressure dipole. Interaction of such far-field dipolar pressure-driven flows results in many interesting collective dynamical phenomena in regular particle arrays in a channel. In this talk we will focus on the propagation of collective particle-displacement waves in long linear arrays. We will describe the dispersions relation for transverse and longitudinal waves and discuss propagation of wave packets for different initial particle-displacement distributions.

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