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# Layering Phenomena in Colloidal Suspensions

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**Abstract:** Aged suspensions of microspheres and two kaolinites exhibit several horizontal layers. Particle concentration is greater at the top of a layer; lower layer tops have increasing particle concentrations. Lower layers also settle more rapidly than upper layers; however, an increase in original suspension concentration results in a proportional increase in the particle concentration of comparable layers and causes comparable layers to settle at a slower rate. The average equivalent diameter of particles within and between kaolinite layers is identical. The maximum measured diameters are also identical. Microsphere layers show similar uniformity of average and maximum diameters. Ultimate settling of layers in suspension does not result in observable layers in the sediment. Data are interpreted as indicating that, in a colloidal suspension, particles interact to become observable as definite horizontal layers. A sequence of mechanisms is proposed for layer formation.

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