packing and, as a result, the particle bulk density. The goal of this study is to compare two methods that estimate particle bulk density without directly sampling suspended particles. A new, fast, but untested method uses a Sequoia Scientific LISST 100× particle sizer, which records beam attenuation (Cp, m-1). The measured beam attenuation obtained from the LISST is proportional to mass in suspension. Volume in suspension can also be obtained from the LISST. Dividing mass in suspension by volume in suspension yields particle bulk density (ρ). A second, more accurate, but more labour-intensive method involves the use of a digital video camera (DVC), which measures particle size and settling velocity. With knowledge of the density and viscosity of the fluid, Stokes Law can be re-arranged to solve for particle density. These instruments were mounted to a Modified in Situ Size Settling Column Tripod (MINSSECT) and deployed in 12 m of water at the Martha's Vineyard Coastal Observatory. The strength of correlation between individual and bin-averaged densities from the LISST and DVC methods will be used to evaluate whether the LISST method offers an accurate alternative to the DVC method for non-invasive, in situ estimation of particle bulk density.

## Assessing two methods for estimating bulk density of particles in suspension

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Particle density is fundamental for determining clearance rate of a suspension because it affects settling velocity. In most aquatic environments, however, suspended sediment is composed of loosely packed particle aggregates that cannot be sampled without disrupting the particle





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