

Abstract Submitted
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Representative subsampling of sedimenting blood¹ HOWARD STONE, Princeton University, BHARGAV RALLABANDI, UC Riverside, JANINE NUNES, ANTONIO PERAZZO, Princeton University, SERGEY GERSHTEIN, Abbott Point of Care — It is often necessary to extract a small amount of a suspension, such as blood, from a larger sample of the same material for the purposes of diagnostics, testing or imaging. A practical challenge is that blood sediments noticeably on the time scale of a few minutes, making a representative subsampling of the original sample challenging. Guided by experimental data, we develop a Kynch sedimentation model to discuss design considerations that ensure a representative subsampling of blood, from a container of constant cross-sectional area, for the entire range of physiologically relevant hematocrit over a specified time of interest. Additionally, we show that this design may be modified to exploit the sedimentation and perform the subsampling to achieve either higher or lower hematocrit relative to that of the original sample. Thus, our method provides a simple tool to either concentrate or dilute small quantities of blood or other sedimenting suspensions.

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Howard A. Stone
Princeton University

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