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Mathematical Rigor in Introductory Physics MICHAEL VANDYKE, WILLIAM BASSICHIS, Texas A&M University — Calculus-based introductory physics courses intended for future engineers and physicists are often designed and taught in the same fashion as those intended for students of other disciplines. A more mathematically rigorous curriculum should be more appropriate and, ultimately, more beneficial for the student in his or her future coursework. This work investigates the effects of mathematical rigor on student understanding of introductory mechanics. Using a series of diagnostic tools in conjunction with individual student course performance, a statistical analysis will be performed to examine student learning of introductory mechanics and its relation to student understanding of the underlying calculus.

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