Physics 118 - Studio 8 Abstract

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Abstract

In this investigation, we estimated the coefficient of friction and the corresponding uncertainty for identical brass blocks on 4 different surfaces. The purpose was to demonstrate that different materials on a flat surface may display varying degrees of friction when put in contact with same substance. This was done by lifting a board with 4 identical masses (of brass) each on a different substance (rubber, wood, sand-paper, and teflon) and recording when each mass began to move. It was found that rubber had the highest coefficient of static friction with the brass, of $1.20 \pm .07$, while the other substances were much closer in value and consequently we cannot confidently state a strict ordering. Wood was found to have a coefficient of $.41 \pm .04$ with the brass, while sand-paper was $.42 \pm .05$, and teflon was $.33 \pm .04$. To ensure more clear conclusions in future experiments, it's important to be sure to take multiple measurements and record angle measurements as carefully and precisely as possible.