Effect of Vibration-Isolation Measures on AFM Height Measurement

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Abstract. In this study, a comparison is made between two Atomic Force Microscopy (AFM) vibration-isolation measures: a passive anti-vibration table and an acoustic isolation cover. The focus was on determining the standard deviation from height measurements taken at a single point on a surface. Based on its magnitude, the effectiveness of specific vibration-suppression measures can be determined. Deactivating the air table on which the microscope is placed resulted in an increase in height standard deviation by a factor of 3.1. The impact of the cover, under our typical measurement conditions, was found to be negligible, falling below the detectable threshold of our measurements.

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