



Confining the Test-Space for Greater Reproducibility in Environment Conditions and More Precise Measurements for Sliding Over Ice

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Abstract

Further progress in sliding performance over ice requires greater control of the environmental conditions. Air conditions play a meaningful role in the reproducibility of test results which is why controlling these conditions is vital for obtaining more valuable data. This is important where sliding occurs over longer distances, such as a long ice-track made for skeleton or in the test room with sliding distances of 3 meters long. The aim was to introduce an enclosure around the ice-track to determine whether less variable environmental conditions could be produced. Two test conditions were considered representing dry-ice and wet-ice conditions without the enclosure and with the enclosure (to confine the test space). Ice temperature and air conditions (temperature and humidity) were measured in a sub-zero temperature test laboratory. Multiple sensors were used on an ice track to measure the sliding speed of metal blocks resulting from the change in environmental conditions. The effect of the test-space confinement on stabilizing the environmental conditions resulting in a more accurate determination of the sliding speed will be shown. Stabilized air conditions from confining the space around the ice track will provide a new environmental control improving the capability to detect smaller improvements in the sliding speed.

Keywords: ice; experiments; temperature; humidity; reproducibility