

# THE DEVELOPMENT OF AN INSTRUMENTED WHEELCHAIR PROPULSION TESTING AND TRAINING DEVICE

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## **Abstract**

This paper describes an instrumented wheelchair dynamometer system, the WheelMill System (WMS), developed for testing and training manual wheelchair users. Three participants wheeled on the WMS, over a tile surface and up two different slopes with the Smartwheel to compare speed and forces. The WMS reasonably simulated propulsion over a tile floor. For the slopes, the speed oscillated over a greater range and was slower, and the measured peak forces were higher. The WMS may have several research and clinical applications, though additional studies on a greater and more diverse population are needed.