How To Brush the Ice To Score Better in Curling?: The Influence of Different Angles Between Curling Brushes and Ice Surfaces on Curling Deceleration Movements

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With the Beijing Winter Olympics, curling has become one of the big hits. Through research, professional curlers will brush ice at 40 ° - 60 °, because the curling brush is a universal head, when the force and the direction are fixed, changing the state of curling deceleration movement. This work aims to use Solidworksmodeling, Unity virtual simulation, mathematical regression statistical prediction, and MATLAB data visualization to find the most suitable gimbal pole angle under the integration of the sports and physics, to make curling adjustable and provide a reference for improving its competitive level. The conclusion represents the gimbal pole angle is 54.7°, the angular acceleration is 17°rad/s2 which slows down the curling deceleration and has a longer relative displacement. At 60.1°, the angular acceleration is 31°rad/s², relative displacement is the shortest. So as to help athletes formulate real-time strategies, and also promote curling to be better popularize and theoretical.

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