Research on Developing the Wheelchair which Can Climb the Kerb Using Center of Mass

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In the case of ordinary manual wheelchair cannot climb the kerbs. So it causes danger of accidents and limited occupant's activity. Our research developed a wheelchair which can overcome these problems. We suggested two solution. First, make it possible to move the axis of rear wheel to change the position of center of mass. Second, we installed the speed reducer for decrease necessary torque. Next we suggested three physical analysis results. First, location of the center of mass which wheelchair occupant can lift the front wheel. Second, location of the center of mass which decrease the necessary torque. Last the wheelchair has to keep the condition that wheelchair is not overturn. We designed wheelchair based on these and we made prototype and ride it for verification. The prototype can climb the 12cm kerbs so we verified it can apply in real situation.

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