

Snow Rendering for Interactive Snowplow Simulation: Improving Driver Ability to Avoid Collisions when Following a Snowplow

In snowing conditions, following a snowplow or any vehicle can create an extremely dangerous situation. The danger comes from the human visual system's inability to accurately perceive speed and the motion of the lead vehicle, increasing the potential for rear-end collisions. The overall goal of this proposal is to advance a snowplow driving simulation framework for use as a tool in understanding safety issues related to winter driving, especially in situations in which a snowplow is necessarily present. Our specific focus for this proposal is on improving the how snow particles interact with the snowplow and on examining rear lighting techniques that can more efficiently alert a following vehicle's driver that a snowplow may be slowing down. The proposed work will move us closer to creating better designs and configurations on real snowplows and has the potential to greatly improve winter driving conditions for everyone.