Abstract Submitted
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Simulated Ten Pin Bowling Collisions JACOB BILLS, CRAIG HOWALD, Marietta College — This work investigates the results of the dynamics in the collisions that occur in ten pin bowling. A finite element modeling system (LS-Dyna) was used to construct simplified but approximately physically realistic models and simulate collisions involving the twelve body system composed of a ball, ten pins, and a floor. The investigation focuses on the qualitative features of the map of final pin configuration as a function of the initial conditions. To appropriately limit the breadth of the initial configuration space investigated, the only variables adjusted were the position of the ball upon entering the pins and the initial angle of velocity relative to the long axis of the lane. Results concerning the size and shape of the sets of initial conditions that lead to similar final configurations, in particular those leading to none of the pins remaining standing (aka "strikes"), are shown.

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