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Apparent non-conservation of linear momentum in collision of golf balls BEN YU-KUANG HU, Department of Physics, The University of Akron, ALICE CHANCE, Department of Physics, Astronomy and Meteorology, Western Connecticut State University — We present data of a one-dimensional collision between a rolling and a stationary golf ball on a rough surface, obtained by video capture using an digital camcorder and analyzed using Logger Pro 3.7 software from Vernier Software and Technology LLC. The collisions appear *not* to conserve linear momentum. We argue, using conservation of *angular* momentum, that this apparent non-conservation of linear momentum is not, as might be expected, due to the sliding friction of the balls with the rough horizontal surface after they collide, but rather is due to the friction between the covers of the balls during the short time of contact during the collision.

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