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Unrealistic coefficients of sliding friction in numerical simulations of granular material

We focus on a simple model of elastic-frictional collisional contact employed in many numerical simulations of granular flows and highlight the role played by the tangential coefficient of restitution in determining an effective coefficient of normal restitution. We show that the unrealistically high value of the coefficient of sliding friction often employed in numerical simulations, typically without a physical explanation, together with complete tangential restitution, is energetically equivalent to a lower and more realistic value of sliding friction and a more realistic lower tangential restitution.