A string falling onto a table JAMES HANNA, Virginia Polytechnic Institute and State University — In the light of recent thought-provoking experiments on different types of chains, I consider the problem of an inextensible/incompressible string falling under gravity and undergoing a collision with a rigid table. The question of interest is whether the free upper end of the string experiences an acceleration greater than a free-falling string. I find that the answer is yes, subject to an assumption about the boundary condition at the colliding lower end. I propose some new experiments and simulations to assess the validity of the assumption and test the prediction.

James Hanna
Virginia Polytechnic Institute and State University

Date submitted: 03 Nov 2013   Electronic form version 1.4