Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Diving dynamics of seabirds SUNGHWAN JUNG, BRIAN CHANG, MATT CROSON, Virginia Tech, LORIAN STRAKER, CARLA DOVE, Smithonian Museum — Diving is the activity of falling from air into water, which is somewhat dangerous due to the impact. Humans dive for entertainments less than 20 meters high, however seabirds dive as a hunting mechanism from more than 20 meters high. Moreover, most birds including seabirds have a slender and long neck compared to many other animals, which can potentially be the weakest part of the body upon axial impact compression. Motivated by the diving dynamics, we investigate the effect of surface and geometric configurations on structures consisting of a beak-like cone and a neck-like elastic beam. A transition from non-buckling to buckling is characterized and understood through physical experiments and an analytical model.

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Date submitted: 14 Nov 2014 Electronic form version 1.4