

Abstract Submitted
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Stable Solitary Waves in Granular Alignments¹ YOICHI TAKATO,
SURAJIT SEN, SUNY Buffalo — We study the propagation of an impulse in a
loaded chain of elastic spheres where the spheres are held between fixed walls. We
show that for a certain critical loading, propagating impulses develop into solitary
waves and these solitary waves are not measurably affected by wall collisions, the
latter being typically the case with granular solitary waves. The properties of these
special solitary waves and of possible connections between this problem and the
Fermi-Pasta-Ulam problem will be addressed.

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