

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

The Life and Times of a Ruck in a Rug DOMINIC VELLA¹,
MOKHTAR ADDA-BEDIA, AREZKI BOUDAUD, LPS ENS, Paris — We study
the familiar problem of a ruck in a rug. Under lateral compression, a rug bends out
of the plane forming a ruck - a localised region in which it is no longer in contact
with the floor. We consider the equilibrium of such a ruck. Once the external force
that caused the compression is removed, experience tells us that the ruck may either
remain or flatten out under its own weight. We quantify the conditions under which
each of these two scenarios occurs. We also consider how the propagation of a ruck
along the carpet facilitates large-scale sliding.

¹Also: DAMTP, Cambridge

Dominic Vella
DAMTP, University of Cambridge

Date submitted: 21 Nov 2008

Electronic form version 1.4