

A perfect spring

K. Proesmans¹

¹UHasselt, Hasselt, Belgium

Abstract

We introduce a new class of transfer matrices whose largest eigenvalue is determined by a simple explicit algebraic equation. As an application, we construct a “perfect spring”, namely a polymer with non-Gaussian, exponentially distributed sub-units which nevertheless remains harmonic until it is fully stretched. Furthermore, we discuss the phase-transitions in this class of systems.