

Book Review: *The Noisy Oscillator*

The Noisy Oscillator. The First Hundred Years, from Einstein to Now. Moshe Gitterman, World Scientific, Singapore, 2005.

Published Online: June 9, 2006

This is a short and readable book which contains a very complete account of linear and nonlinear, damped and undamped oscillators, driven by additive or multiplicative random forces, the case of multiplicative noise being associated with a random frequency. The author details almost all relevant developments in this important subject since the pioneering works of Einstein, Smoluchowski and Langevin until the recent date of 2004. In the century elapsed since Einstein's *annus mirabilis* there has been the great development of non-equilibrium statistical mechanics of which the noisy oscillator can be considered one of the main pillars.

Gitterman's book consists of thirteen chapters. These are devoted to Brownian motion, linear and non-linear oscillators, driven by either additive or multiplicative noises. The noise itself can be Gaussian, white or colored, or non-Gaussian exemplified by dichotomous or shot noises. The book makes for pleasant reading and can be warmly recommended to graduate students and to investigators of a wide range of subjects, from physical sciences to social sciences and technology.

Jaume Masoliver
Departament de Física Fonamental
Universitat de Barcelona
08028-Barcelona, Spain
e-mail: jaume.masoliver@ub.edu