You are playing a fair game with $X_n: \ n = 0, 1, 2, \ldots$ denoting your gain in the $n$-th game ($Prob\{X_n = \pm 1\} = \frac{1}{2}$). Then, of course, $S_n = X_1 + \ldots X_n$ is your total gain during the first $n$ games. The central limit theorem of probability theory then claims that $Prob\{\frac{S_n}{\sqrt{n}} < x\} \to \Phi(x)$ as $n \to \infty$. (Here, as it will be briefly explained in the talk, $\Phi(x) = \int_{-\infty}^{x} \exp\left(\frac{-y^2}{2}\right) dy$ is the gaussian, i. e. normal distribution function.) In other words, the sequence $X_1, X_2, \ldots$ of randomly depending random variables obeys a *stochastic, chaotic* law. The goal of the lecture to provide a much interesting and at the same time naturally arising example of a *deterministic* dynamics (in fact, a mechanical process) which possesses the same chaotic behaviour. This kind of phenomenon also occurs in a wide variety of models, including in particular the oscillations of stock prices.