Teaching Chaos, Monte Carlo and Magnetism to Undergraduates
GASTON BARBERIS, Instituto de Física, Unicamp — The generation of pseudo-random numbers is one of the interesting problems in Monte Carlo simulations, mostly because the common computer generators produce periodic numbers. The use of simple chaotic systems, as the well known logistic map to generate the pseudo-random numbers, applying the results to the simple 2-D or 3-D Ising models, give the opportunity to teach undergraduates two of the modern and interesting topics in our age. I present the technics to calculate, analyze and obtain the pseudo-random numbers, to show in a desk computer the lack of periodicity up to 10^{11} numbers, and the application to simple physical calculations.

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