PHYSICAL MATHEMATICS SEMINAR

ON THE DIGITS OF π

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ABSTRACT

Following a brief review of the history of computing π, we introduce the work of Galperin who contends that the successive digits of π may be produced using a dynamical system. The system, presented under the guise of billiard balls, considers the rectilinear collisions of two point masses m and $M = 100^N m$ with each other and a wall. Mass m is initially placed between the wall and the oncoming mass M. For such initial conditions, Galperin's method for determining the successive digits of π at each value N is simply to count the total number of ball-ball and ball-wall collisions. Computations up to $N = 6$ illustrate Galperin's method for over three million collisions. General results concerning this dynamical system found while performing the computations will be presented, the most important of which is a discrete invariant of the motion.

TUESDAY, APRIL 15, 2014
2:30 PM
Building E17, Room 136

Reception following in Building E17, Room 401A
(Math Dept. Common Room)

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