

#5 22-SEP-1991 05:42:47.36

Subject: A Note of Interest
Original_To: Dima Shepelyansky <comi@pavia.infn.it>

Dima,

Do me a large favor and place a copy of the following letter on Boris' desk. It may ease the sting of our disagreements re quantum chaos.

jf

22 September 1991

Gentlemen:

I regard it as a high honor indeed to be in a position to recommend that Professor Boris Chirikov be awarded the Boltzmann Medal.

Although Boris is a member of the Soviet Academy of Science and the distinguished Soviet scientists V. I. Arnol'd, L. M. Barkov, and S. T. Belyaev elected to author a paper devoted to Boris' 60th birthday, convincing a panel of largely western scientists that Boris is a worthy candidate is nonetheless something of a problem. Boris was the first to discover a "route to chaos" long before that phrase became fashionable. Yet when "routes to chaos" are listed, Boris' name is never mentioned. Nonetheless, from the few-body problem to the many-body problem, anyone interested in the stability of nonlinear systems quietly invokes the Chirikov resonance overlap criterion without fanfare and seemingly without recognition of the genius it took to invent it. Boris is the absolute wizard of the uncontrolled approximation. In another direction, everyone knows that Ruelle and Takens coined the phrase "strange attractor," but no one knows it was Boris who coined the popular phrase "Arnol'd diffusion" describing the weak chaos which exists in almost every weakly nonlinear system.

Let me now argue by analogy. Anyone in the western world who has carried use of his personal computer beyond the game-playing stage knows that the Hewlett-Packard line of laserjet printers are the workhorses of the industry. Whatever you want done, they do, not only well but for years without breakdown. Boris is similar. When nonlinear dynamics/chaos needed something done, Boris did it quietly and well. For decades, the Soviet system prevented him from attending conferences in the West and from even publishing in the West. Indeed, much of his work even now resides in Russian language preprints. It is an unsung tribute to the quality of his work that so many in the West overcame all obstacles to learn what Boris was doing.

Boris' work on the kicked rotor, both classical and quantal, is the paradigm upon which much that followed in either classical or quantal chaos is based. His papers on this topic are among the most frequently referenced in all of nonlinear dynamics/chaos. I could go on listing accomplishments, but let me instead assert that I place Boris in the same category as Arnol'd, Sinai, and Rabinovitch in the East and in the same category as Henon, Lorenz, and Rossler in the West.

The history of science will most assuredly honor this man. It is my fondest hope that the Boltzmann Medal Committee will honor him during his lifetime.

Cordially,

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Joseph Ford
Regents' Professor