Random Matrix Theory for Socio-Dynamical Systems

Milan Krbálek*, Ondřej Kollert

Department of Mathematics, Faculty of Nuclear Sciences and Physical Engineering,
Czech Technical University, Prague, Czech Republic
* Electronic Address: milan.krbalek(at)fjfi.cvut.cz

In earlier works some scientists pointed out the non-trivial interconnection between public transport in Latino-American countries and classical families of random matrices. It is a long-term goal of mathematicians, however, to find a similar link for vehicular systems, i.e. for various ensembles of vehicles moving on expressways. In some recent papers the authors of this contribution have proved that statistical properties of a vehicular microstructure are very well predictable by means of instruments of one-dimensional thermodynamics. Such an analogy between vehicular samples and thermodynamical gases with middle-ranged interactions among particles have led us to the suspicion that there exists an certain (yet unknown) ensemble of random matrices whose spectral properties follows the trends in a vehicular microstructure. In our contribution we will demonstrate that the search for Vehicular Random Matrices may be successful.

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