Random Matrix Model for Socio-Physical Systems

Milan Králek*

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

We will introduce a random matrix model imitating a repeated stochastic action inside the socio-physical systems, especially inside the pedestrian/vehicular traffic samples. We will demonstrate a possible way how to solve the steady state of such a system by means of Random Matrix Theory approaches. Except the macroscopical description of the steady state we will put more emphasis on statistical distributions of individual components, i.e. on a detailed structure of the system examined. The comparison between numerical realization of the matrix model mentioned and analytical predictions will be discussed in details.