Wave-corpuscle dualism of discrete dynamical systems

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The authors give an analysis of a discrete dynamic system both from the standpoint of particle and wave properties; the limitedness of a particle-based approach to the assessment of running waves is substantiated. It is shown that the natural mode of vibrations, i.e. a standing wave, gives the actual load of a dynamic system in all points only at the maximum mass deflection moment, and at any time — only in some points of the system, i.e. at vibration form nodes. In the rest points of time the loads in the system can be found when taking into account sine of the phase displacement between the running and standing waves. It is obtained that the application of a damper with drag coefficient equal to the system's impedance leads to the absence of any resonant loads in the system.

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