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Symmetries shape the currents

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Dynamical systems often contain oscillatory forces or depend on periodic potentials. Time or space periodicity is reflected in the properties of these systems through a dependence on the parameters of their periodic terms [1,2]. In this talk it is shown that *simple symmetry considerations* determine how their properties depend functionally on the amplitudes and the phases of the periodic terms, regardless of whether they are classical or quantum, stochastic or deterministic, dissipative or non-dissipative [3]. It is shown that, by using this formalism, a small set of measurements is enough to obtain the functional form for a wide range of parameters.

[1] J. A. Cuesta, N. R. Quintero, and R. Alvarez-Nodarse, Phys. Rev. X 3, 041014 (2013).

[2] Niurka R. Quintero, J. Cuesta and R. Alvarez-Nodarse, Phys. Rev. E 81, 030102(R) (2010).

[3] J. Casado-Pascual, J. A. Cuesta, N. R. Quintero, and R. Alvarez-Nodarse, Phys. Rev. E 91, 022905 (2015).

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