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Universal energy distribution in thermally isolated driven systems LUCA D'ALESSIO, Boston University, GUY BUNIN, Technion, Haifa, ANATOLI POLKOVNIKOV, Boston University, YARIV KAFRI, Technion, Haifa — The evolution of the energy distribution of a thermally isolated and repeatedly driven system is studied. A general formalism to calculate the width of the energy distribution is derived and the result is compared with the thermal width. This comparison allow us to identify two regimes: quasi-thermal and run-away. In the quasi-thermal regime the width on the energy distribution of the driven system is proportional to the thermal width with a protocol-dependent universal coefficient. In the run-away regime the width of the energy distribution is an universal function of the energy with an exponent different from the thermal case. A simple formulation in terms of entropy production allow us to distinguish these two regimes. Examples and application to both classical and quantum system (mainly cold atoms) are presented.

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