



Algorithmic pattern identification in pollution-precipitation dynamics from Mexico City

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Interactions between complex-system components are often difficult to model in the absence of prior knowledge of their dynamics. However, even in such a case, behavior patterns can be identified, and subsequently recognized and statistically validated, given that the couplings of interest are sufficiently strong. In the present work, an analysis of the interaction between precipitation and atmospheric pollution in Mexico City is presented. The reciprocal influence, heuristically described by pollutant particles providing an excess of condensation nuclei - on the one hand, and rain drops scavenging down pollutants from the air - on the other, gives rise to a remarkable interplay, whose statistics are presented herein.