

# Landscape and dynamical complexity in two simple statistical physics models

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We want to know to what extent the characteristics of the potential energy landscape of a system influences its relaxational dynamics to thermodynamic equilibrium. With this aim, we compare the energy landscape characteristics, like the number and index of stationary points, for two well known models from statistical physics: a model with a "complex" landscape, but without quenched disorder and a model with a "simple" energy landscape, but with quenched disorder. We observe that landscape complexity does not lead, by itself, to complex relaxational dynamics. The role of averaging over quenched disorder and the large system size limit in the ultimate behavior of statistical models is addressed in an attempt to understand the more basic links between complex energy landscapes and relaxational dynamics.