

A multifractal rigidity is the phenomena that the coincidence with the two multifractal spectra implies more strong relation between the given two dynamical systems. For the dimension spectrum of a Bernoulli measure defined on a repeller of a piecewise linear Markov map, Barreira, Pesin and Schmeling proved that a rigidity holds if the repeller is modelled by the full shift of two symbols. It was an open problem whether this rigidity holds in the case of three or more symbols. We give a negative answer to this problem by constructing a counter-example and we show that our counter-example is the unique one in the case of three symbols.