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Labyrinth model and products of two Cantor sets.

We consider the Labyrinth model that was introduced in 80s as a model for two-dimensional quasicrystals. We will show that the spectrum of this model, which is known to be a product of two Cantor sets, is an interval for small values of the coupling constant. We also consider the density of states measure of the Labyrinth model, and show that it is absolutely continuous with respect to the Lebesgue measure for almost all values of coupling constants in small coupling regime. (Received August 27, 2015)