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Asymptotic theory of path spaces of graded graphs and its applications*

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Abstract. The survey covers several topics related to the asymptotic structure of various combinatorial and analytic objects such as the path spaces in graded graphs (Bratteli diagrams), invariant measures with respect to countable groups, etc. The main subject is the asymptotic structure of filtrations and a new notion of standardness. All graded graphs and all filtrations of Borel or measure spaces can be divided into two classes: the standard ones, which have a regular behavior at infinity, and the other ones. Depending on this property, the list of invariant measures can either be well parameterized or have no good parametrization at all. One of the main results is a general standardness criterion for filtrations. We consider some old and new examples which illustrate the usefulness of this point of view and the breadth of its applications.

Keywords and phrases: graded graph, Markov compactum, cotransition probability, central measure, filtration, standardness, limit shape

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