Graph classes and their Asymptotic Dimension

Marthe Bonamy

CNRS, Université de Bordeaux, France

marthe.bonamy@u-bordeaux.fr

Introduced in 1993 by Gromov in the context of geometric group theory, the asymptotic dimension of a graph class measures how much "contact" is necessary between balls of "bounded" diameter covering a graph in that class. This concept has connections with clustered coloring or weak diameter network decompositions. While it seems surprisingly fundamental, much remains unknown about this parameter and it displays intriguing behaviours. We will provide a gentle exposition to the area: from the state of the art to the main tools and questions, including some answers. We will introduce and discuss minors in graphs and related concepts.