Directed and mixed graphs close to the Moore bound

James Tuite

Open University

Abstract

The *degree/diameter* problem asks for the order of a largest mixed graph with given diameter and degree parameters. The *degree/geodecity* problem is a generalisation of the degree/girth problem for undirected graphs and asks for the smallest mixed or directed graphs with given out-degree parameters and a unique path property. In this talk I will survey progress on finding general bounds for these problems, including the difficult case of mixed graphs that are not totally regular, and discuss directions which need further research.