Boolean Graphs - A Survey

Tongsuo Wu

School of Mathematical Sciences
Shanghai Jiao Tong University 200240

Abstract

A Boolean graph is the zero divisor graph of a Boolean ring. For a positive integer n, let $[n] = \{1, 2, \ldots, n\}$, and $2^{[n]}$ the power set of $[n]$. A finite Boolean graph B_n is isomorphic to a graph defined on the vertex set $2^{[n]} \smallsetminus \{[n], \emptyset\}$, where two vertices are adjacent if and only if their meet is empty. In this paper, we give a survey of some works done in the area of research related to Boolean graphs, in both graph theoretic and algebraic aspects. We also introduce some most recent works by the author and others.