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# The essential element graph of a lattice

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<https://doi.org/10.1142/S1793557120500230> | Cited by: 3 (Source: Crossref)[< Previous](#)[Next >](#)

## Abstract

Let  $L$  be a lattice. The essential element graph of  $L$ , denoted by  $\mathcal{E}_L$ , is a graph whose vertex set is the set of all nonzero proper elements of  $L$  and two vertices  $a$  and  $b$  are adjacent whenever  $a \vee b$  is an essential element. In this paper, we study the essential element graph of a lattice and we investigate its properties. A necessary condition for regular  $\mathcal{E}_L$  graph to be complete is proved. Also characterization for  $\mathcal{E}_L$  to be complete and completely bipartite are established.

Communicated by I. Chajda

**Keywords:** Lattice • essential element • essential element graph**AMSC:** Primary: 05C69, Primary: 06B99, Secondary: 05C15, Secondary: 05C25

### We recommend

The annihilation graphs of commutator posets and lattices with respect to an ideal

Elham Mehdi-Nezhad et al., Journal of Algebra and Its Applications, 2018

A SMASH PRODUCT CONSTRUCTION OF NONLOCAL VERTEX ALGEBRAS

HAISHENG LI, Communications in Contemporary Mathematics, 2011

RELATION BETWEEN A CLASS OF QUASIPERIODIC LATTICES GENERATED BY THE SUBSTITUTION METHOD AND THE GENERALIZED CONTINUED FRACTION EXPANSION

TOSHIO YOSHIKAWA et al., International Journal of Modern Physics B, 2012

Some properties about the zero-divisor graphs of quasi-ordered sets

Junye Ma et al., Journal of Algebra and Its Applications, 2019

SU(2) LATTICE GAUGE THEORY IN THE ELECTRIC-FIELD REPRESENTATION

J. PIEKAREWICZ et al., International Journal of Modern Physics A, 2012

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