

## ON THE INTERSECTION GRAPHS ASSOCIATED TO POSETS

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### Abstract

Let  $(P, \leq)$  be a poset with the least element 0. The intersection graph of ideals of  $P$ , denoted by  $G(P)$ , is a graph whose vertices are all non-trivial ideals of  $P$  and two distinct vertices  $I$  and  $J$  are adjacent if and only if  $I \cap J \neq \{0\}$ . In this paper, we study the planarity and outerplanarity of the intersection graph  $G(P)$ . Also, we determine all posets with split intersection graphs.

**Keywords:** poset, intersection graph, split graph, planar graph, outerplanar graph.

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