

Topological spaces associated with simple graphs

ABSTRACT

The aim of this article is to associate a topology with a set of vertices for any simple graph (finite or infinite), called incidence topology. A subbasis family to generate the topology is introduced. Some properties of this topology were investigated and were shown that this topology satisfies the property of Alexandroff, i.e. the intersection of each collection of open sets is open. Giving a fundamental step toward studying some properties of simple graphs by their corresponding topology is our motivation. Furthermore, a comparison between two different subbases to generate a topology is presented.

Keyword: Simple graphs; Isomorphic graphs; Alexandroff topology