

## **Some results on $K_p$ complete subgraph**

Bârză Silviu, Spiru Haret University

### **Abstract:**

In a series of papers I present results on minimal complete subgraphs and an algorithm for the determination of these subgraphs.

Minimal complete subgraphs are equivalent with  $K_3$  complete subgraphs. In this paper I generalize the previous results on  $K_p$  complete subgraphs, for  $p > 3$  and I show that  $K_p$  complete subgraphs can be easily determined from  $K_{p-1}$  subgraphs.

More than that, I show that, if  $H$  is a  $K_{p-1}$  complete subgraph of the graph  $G$ , and  $H$  is not a subgraph in every  $K_p$  subgraph of  $G$ , then  $H$  is a maximal complete subgraph of  $G$  and so  $H$  is a clique.

**Keywords:** complete graph, complete subgraph, clique