

Seminar Notes

March 14, 2021

1 Definitions

Tournament - is a directed graph such that $\forall v, u \in V(T)$ only one of the two edges $(v, u), (u, v)$ is in $E(T)$

Hyperedge - is an edge with 2 or more vertices (e.g. $\{v_1, v_2, \dots, v_n\}$)

Hypergraph - is a generalization of a graph where $\forall e \in E$ is a hyper-edge

k-uniform hypergraph - is a hypergraph where $\forall e \in E, |e| = k$ (a graph is 2-uniform hypergraph)

K-Tournament - is a complete k-uniform hypergraph where each edge has a special vertex called tail.

Domination (2-Tournament) - we say that X dominates Y if every vertex in $Y \setminus X$ is adjacent from some vertex in X.

Domination (k-Tournament) - we say that X dominates Y if every vertex in $Y \setminus X$ is in a hyperedge where the tail is in X.