

1135-05-2187

R. W. R. Darling and **Dev R Phulara*** (phulara@comcast.net). *The combinatorial data fusion problem: A Gomory-Hu cut tree approach.*

Two different data sources may place incompatible relational structures on the same set V of objects. A connected weighted graph (V, E, w) arises from one data source and other data source introduces an independence system \mathcal{S} on V , which may be characterized by its circuits, called forbidden sets. The *combinatorial data fusion problem* seeks a subgraph (V, E_1) of (V, E) of maximum edge weight so that no vertex component of (V, E_1) contains any forbidden set. In this talk we will introduce the combinatorial data fusion problems and show how it generalizes many well known combinatorial optimization problems. We will also discuss some approximation algorithms based on Gomory-Hu cut tree to solve those problems. (Received September 25, 2017)