

VCU Discrete Mathematics Seminar

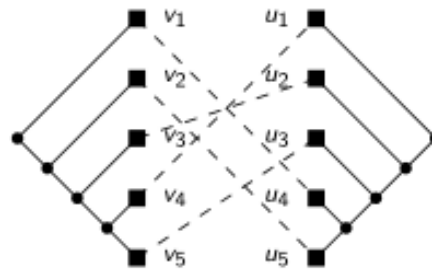
Tanglegram Reconstruction

Prof Sarah Loeb
(Hampden-Sydney College)

Wednesday, Sept. 17
1:00-1:50 EDT

In person in 4145 Harris Hall. And a Zoom option:

<https://vcu.zoom.us/j/81475528886>
password=graphs2357



The reconstruction problem asks if we can uniquely identify a larger structure from its smaller substructures. I'll consider this problem in two contexts: rooted binary trees (a.k.a rooted phylogenetic tree shapes) and tanglegrams. For rooted binary trees, the smaller substructures are leaf-induced binary subtrees; we show such trees are reconstructable. A tanglegram consists of two rooted binary trees with the same number of leaves and a perfect matching between the leaves of the trees. We show that tanglegrams are reconstructable when at least one of the binary trees has that its internal vertices form a path that ends at the root.

For the DM seminar schedule, see:

<https://go.vcu.edu/discrete>