

1039-05-87

Jordan O Tirrell* (tirrellj@lafayette.edu), **Elinor Escamilla**, **Andreea Nicolae**, **Paul Salerno** and **Shahriar Shahriari**. *Nested Chain Decompositions of Normalized Matching Posets of Rank 3*.

When can we necessarily partition a poset into nested chains? We will report on recent progress made by our Claremont REU team on a thirty year old conjecture of Griggs, which gives a sufficient condition—the normalized matching property, also known as the LYM property—for guaranteeing a decomposition of a poset into nested chains. We will present results in support of the conjecture. We discuss different methods of finding nested chain decompositions in rank 3 posets and classify cases where they are useful. As a consequence of our main theorem, the conjecture is true for rank 3 posets of width less than 12. We will also discuss potential methods for solving remaining rank 3 posets. (Received March 07, 2008)