

1037-05-374

**Chris Altomare** (altomare@math.ohio-state.edu), **Neil Robertson\*** (robertso@math.ohio-state.edu) and **Zixia Song** (zsong@mail.ucf.edu). *On the S. B. Rao well-quasi-order conjecture.*

A well-quasi-order is a reflexive and transitive relation in which all strictly descending chains and all anti-chains are finite. Only severely restricted classes of graphs are well-quasi-ordered by induced subgraph inclusion or even subgraph inclusion, given that simple circuits form an infinite anti-chain in these cases. In 1980, S. B. Rao conjectured that a natural partial order defined on valency sequences of finite simple graphs which weakens induced subgraph inclusion is a well-quasi-order. Explicitly, the relation  $D \leq D'$  holds when graphs  $G, G'$  exist, with valency sequences  $D, D'$ , respectively, such that  $G$  is induced in  $G'$ . This talk surveys work done with Zixia Song and Chris Altomare in support of this conjecture. (Received February 06, 2008)