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**S. Selvaraja** and **Joseph Skelton\*** (jwskelt@clemons.edu). *Componentwise Linearity of Powers of Cover Ideals.*

Let  $G$  be a finite simple graph and  $J(G)$  be the cover ideal in a polynomial ring. Assume that  $J(G)^{(k)}$  is the  $k$ -th symbolic power. In this talk we give a criteria on cover ideals of vertex decomposable graphs such that their symbolic powers are not vertex decomposable. We also give a necessary and sufficient condition on  $G$  so that  $J(G)^{(k)}$  is componentwise linear for all  $k \geq 2$  when  $G$  is a graph such that  $G \setminus N[A]$  has a simplicial vertex for any independent set  $A$  of  $G$ . Using this result we prove that  $J(G)^{(k)}$  is componentwise linear for several classes of graphs. (Received January 25, 2022)