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*Graph isomorphisms via discrete Morse theory.*

A discrete Morse function  $f$  on a graph  $G$  induces a sequence of subgraphs of  $G$ . Two discrete Morse functions  $f$  and  $g$  on a graph  $G$  are said to be graph equivalent if  $f$  and  $g$  produce isomorphic subgraphs at each stage of the sequence. In this talk, we count the number of equivalence classes on star graphs  $S_n$  and deduce an upper bound for the number of equivalence classes for a certain collection of graphs. (Received September 17, 2013)