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The zero forcing number  $Z(G)$  is used to study the maximum nullity/minimum rank of the family of symmetric matrices described by a simple, undirected graph  $G$ . We study the positive semidefinite zero forcing number  $Z_+(G)$  and some of its properties. Given a graph  $G$  with some vertices  $S$  colored black and the remaining vertices colored white, the positive semidefinite color change rule is: If  $W_1, W_2, \dots, W_k$  are the sets of vertices of the  $k$  components of  $G - S$ ,  $w \in W_i$ ,  $u \in S$ , and  $w$  is the only white neighbor of  $u$  in the subgraph of  $G$  induced by  $W_i \cup S$ , then change the color of  $w$  to black. The positive semidefinite zero forcing number is the smallest number of vertices needed to be initially colored black so that repeated applications of the positive semidefinite color change rule will result in all vertices being black. The positive semidefinite zero forcing number is a variant of the (standard) zero forcing number, which uses the same definition except with a different color change rule: If  $u$  is black and  $w$  is the only white neighbor of  $u$ , then change the color of  $w$  to black. (Received September 19, 2011)