On some classes of signed graphs with small second largest eigenvalue

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In previous descriptions of some classes of maximal cacti for the property $\lambda_2 \leq r$ (λ_2 being the second largest eigenvalue of the corresponding adjacency matrix), certain graph transformations that preserve the sign of $\lambda_2 - r$ have been used. Now, a possibility of applying such transformations to some classes of signed graphs is examined, especially for $r = 1$.