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Morteza Seddighin* (mseddigh@indiana.edu), 2325 Chester Blvd, Richmond, IN 47374.

Applications of the Two Nonzero Component Lemma.

In computation of Antieigenvalues of matrices the author has proved that the minimizing points for certain types of several variables on the convex set $x_1+x_2+x_3+\dots+x_n=1$ can not have more than two nonzero components. We generalize and apply this lemma to optimization problems in statistics, resource allocation, and portfolio theory. (Received August 26, 2008)