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## On $\pm 1$ eigenvectors of graphs

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**Abstract:** While discussing his spectral bound on the independence number of a graph, Herbert Wilf asked back in 1986 what kind of a graph admits an eigenvector consisting solely of  $\pm 1$  entries? We prove that Wilf's problem is NP-complete, but also that the set of graphs having a  $\pm 1$  eigenvector is quite rich, being closed under a number of different graph compositions.

**Keywords:** Eigenvector, adjacency matrix, Wilf's problem.

Math. Subj. Class.: 05C50

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## O $\pm 1$ lastnih vektorjih grafov

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**Povzetek:** Ko je obravnaval svojo spektralno mejo za neodvisnostno število grafa, je Herbert Wilf leta 1986 zastavil vprašanje, kakšna vrsta grafa dopušča lastni vektor, ki sestoji samo iz  $\pm 1$  komponent? Dokažemo, da je Wilfov problem NP-poln, pa tudi, da je množica grafov, ki imajo  $\pm 1$  lastni vektor precej bogata, saj je zaprta za številne različne kompozicije grafov.

**Ključne besede:** Lastni vektor, matrika sosednosti, Wilfov problem.

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