ISOLATION and EXCLUSION: A MATTER of COLOR

ABSTRACT

We discuss some novel graph coloring problems I posed a quarter-century ago. Theoretical and algorithmic results (due mainly to S. Maurer) and binary-integer programming formulations (due to J. Whitin and the speaker) will be described, as will generalizations and contributions due to A. Frank, E. Gyori and L. Lovasz. We sketch both the original sociological motivations (concerning segregation and integration) and more speculative recent ecological ones concerning the optimal design of nature reserves. Some plausible extensions and applications will be identified.