



Invited Speaker

Dr. Richard Brualdi

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“The Gale–Berlekamp Light-Switching Problem
and a Permutation Variation”

Wednesday, November 5, 2014 • Smith Hall 154 • 4:00pm

Abstract

Consider an n by n array of light bulbs each controlled by a switch. Suppose there are also $2n$ other switches which allow one to simultaneously switch all the light bulbs in a row or all the light bulbs in a column. Now use the individual switches and turn some of the light bulbs on. With the row and column switches only, can one get all the lights in the off position? If not, how few on-lights are possible? This problem, its connections to coding theory, and a permutation variation is the subject of this talk.