Seminar on Combinatorial Computing
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Room 3309, Graduate Center
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Illuminating a convex polygon by floodlights

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Abstract

In recent years, there has been a lot of interest in illumination questions, a new variant of visibility problems in combinatorial and computational geometry. We survey some results and open problems in this field. A *floodlight of angle* A is a light that illuminates in a (contiguous) cone of angle A. A floodlight placed in a simple polygon with its apex at a vertex is called a *vertex light*; if it has angle A, then an A*-vertex light*. Answering a question raised by J. O'Rourke and J. Urrutia, we show that four 45-degree-vertex lights always suffice to illuminate any convex n-gon $(n > 3)$.

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