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### Candidate Sets for the Art Gallery Problem

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#### Abstract for the Combinatorics Seminar 2019 May 7

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The decision version of the Art Gallery Problem asks, for a given polygon  $P$  and integer  $k$ , whether  $P$  can be guarded by  $k$  points. In other words, can  $P$  be covered by the visibility regions of at most  $k$  points in  $P$ ? A set  $C$  (of any size) is called a candidate set for  $(P,k)$  when, if  $P$  can be guarded by  $k$  points, it can be guarded by  $k$  points in  $C$ . I will show that it is not possible for an algorithm to produce a subexponential-sized candidate set in subexponential time unless the Exponential Time Hypothesis fails.

This is joint work with Tillmann Miltzow.

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