GAIA Seminar

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Smallest Enclosing Circle Problems

Abstract. Given a set P of n points in the plane, we want to find the minimum enclosing circle of P whose center is constrained to lie on a given subset S of the plane, e.g., a set of points, a set of segments (or lines), or a simple polygon.

For each situation we propose algorithms and matching lower bounds. Along the way, we find an $\Omega(n \log m)$ lower bound in the algebraic computation tree model for the subset problem: Given two sets A and B of size m and n, is A a subset of B?

Joint work with Luis Felipe Barba and Prosenjit Bose.

December 12 (Wed), 2012. 15:00 – 16:00
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GAIA Geometry and its Applications