**$K_8$ is a Sphere-of-Influence Graph. $K_9$ is not.**

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Let $X$ be a finite set of at least 2 points in the Euclidean plane. The Sphere-of-Influence graph of $X$ is defined as follows: For each point $P \in X$ let $r_P$ be the smallest distance from $P$ to another point in $X$, and $C_P$ the circle with center $P$ of radius $r_P$. The Sphere-of-Influence graph of $X$ is the intersection graph of the set of circles of the points in $X$. A reasonable goal, first stated in 1989, is to determine which graphs arise as sphere-of-influence graphs of some set of points. We now know the census for complete graphs. This can also be phrased in terms of Euclidean geometry. There is a set of 8 circles in the Euclidean plane that both pairwise intersect and have no center of any circle inside any other. There is no such set of 9 circles.

Key words: Sphere-of-Influence graph, complete graph, Euclidean plane