

Poncelet porism, old and new: Poncelet grid and the billiard in an ellipse

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Abstract

Recently R. Schwartz found an interesting generalization of the classical Poncelet theorem concerning the structure of the so-called Poncelet grid, the set of intersection points of the sides of a polygon inscribed into one conic and circumscribed about another conic. I will discuss the relations of the Poncelet porism with the billiard inside an ellipse and deduce the theorem of Schwartz from complete integrability of the billiard system.