

Existence of symmetric centers for planar cubic differential systems

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We investigate the simultaneous existence of two centers for planar cubic differential systems possessing different types of symmetry. Firstly, we introduce the normal forms for such systems under four types of symmetry. Next, we exhibit the necessary and sufficient conditions for the existence of two simultaneous centers and for the isochronicity of such centers. Finally, a discussion on the results obtained in our investigation and some answers for questions raised in [1] and [4] are presented.

References

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