

بسمه تعالی



دانشگاه صنعتی اصفهان

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## سمینار علمی

Estimate of the number of zeros of Abelian integrals for  
some Lienard systems of type (4,3)

## پگاه مقیمی

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زمان: چهارشنبه ۹۴/۷/۲۹ - ساعت ۱۱

we present a complete study of the zeros of Abelian integrals obtained by integrating the dual 1-form corresponding to some lienard systems of type (4,3) over the compact level curves of the associated hyperelliptic Hamiltonian of degree five. Such a family of compact level curves surround a nilpotent center. It is proved that the lower and upper bounds of the maximal number of zeros of abelian integrals are respectively 4 and 5. The proof relies on the Chebyshev criterion for Abelian integrals and some techniques in polynomial algebra, not by using numerical approximation, thus the proof is strict.

