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SOME DYNAMICAL PROPERTIES OF THE COSINE-MEROMORPHIC FAMILY

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Abstract

The focus in the present work is to investigate some dynamical properties of one parameter cosine-meromorphic family, $f_\lambda(z) = \lambda\frac{\cos z}{z}$, $z \in \hat{\mathbb{C}}$ for $\lambda > 0$. It is found that the function $f_\lambda(z)$ has infinitely many singular values. All these singular values are bounded. It is also shown that the number of fixed points of $f_\lambda(z)$ increases in the multiple of even number when λ increases. Further, the nature of real fixed points are determined. Finally, the results found here are compared with the results on the dynamical properties of one parameter cosine family $\lambda\cos z$ and cosine-root family $\lambda\cos(\sqrt{z})$ for $\lambda > 0$.

Key Words : *Dynamics, Fixed points, Singular values.*

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