

CHAOS ANALYSIS AND EXPLICIT SERIES SOLUTIONS TO THE SEASONALLY FORCED SIR EPIDEMIC MODEL

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The dynamics of mathematical models describing the spread of an infection can display chaotic oscillations. In this work, we consider a generalization of the classical Susceptible-Infected-Recovered (SIR) epidemic model which accounts for seasonal effects. Combining numerical and analytic techniques, we gain new insights into the complex dynamics of a recurrent disease influenced by the seasonality.

References

- [1] Duarte, J., Januário, C., Martins, N., Rogovchenko, S., & Rogovchenko, Y. (2019). *Chaos analysis and explicit series solutions to the seasonally forced SIR epidemic model*. *J. Math. Biol.* 78, 2235-2258. <https://doi.org/10.1007/s00285-019-01342-7>