

# Stability Analysis of a Fractional Order Food Chain Model

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We provide an analytical proof of the local stability contained in the region of coexistence of the three species of a tritrophic fractional–order food chain model [1]. An expansion formula for fractional derivatives given as in form of a series involving function and moments of its  $k$ -th derivative is used. The tritrophic fractional–order food chain system is converted to a system of ordinary differential equation of order  $3M$ . Also stability analysis is studied by using the fractional Routh–Hurwitz stability conditions in origin [2]. Numerical results show that the presented method is easy to implement and accurate to differential equations of fractional order [3].

## References

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