PERIODICITY, DELAYS AND NUMERICAL METHODS IN BIOMATHEMATICS: A RECENT ACCOUNT

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Periodicity is common in natural phenomena. And delays are not so uncommon if we accept the challenge of dealing with complex, yet more realistic models. Numerical analysis is then mandatory when the target is either simulating, analyzing stability or detecting bifurcations. Based on the recent works [1, 2, 3], in this talk an up-to-date account is given of the interplay of these three characters, with an eye on applications in biomathematics.

References

[1] Andò, A. & Breda, D. (2019). *Convergence analysis of collocation methods for computing periodic solutions of retarded functional differential equations*. Submitted.

[2] Breda, D. & Liessi, D. (2018). *Approximation of eigenvalues of evolution operators for linear renewal equations*. SIAM J. Numer. Anal., 56(3), 1456–1481. https://doi.org/10.1137/17M1140534

[3] Breda, D. & Liessi, D. (2019). *Floquet theory and stability of periodic solutions of renewal equations*. Submitted.