Almost periodic and almost automorphic dynamics for non autonomous functional differential equations

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We study the long term behaviour of the relatively compact solutions of non autonomous functional differential equations with finite delay (FDE for short). Some recurrence properties on the temporal variation of the FDE are assumed, therefore their solutions induces a skew-product semiflow with a minimal flow in the base.

We introduce general conditions which ensure the extensibility of the trajectories in the minimal sets and state different properties which imply the monotonicity or the eventually strong monotonicity of the corresponding semiflow. We give natural conditions based in the linearized semiflow that provide the presence of almost automorphic and almost periodic minimal sets. We apply some of the previous conclusions to the theory of neural network models described by FDE. This is a join work with Sylvia Novo and Ana M. Sanz

References

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