

First Joint Meeting Brazil Italy of Mathematics  
Special Session: Topological and impulsive methods for  
the qualitative analysis of differential equations,  
differential inclusions and difference equations

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**Title:** Persistence in seasonally varying predator-prey systems

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**Abstract:**

In this talk we will present some recent results on persistence in seasonally forced population dynamics models. Using the notion of basic reproduction number  $R_0$ , given by Nicolas Bacer in the case of periodic models, we prove uniform persistence when  $R_0 > 1$ . We will give some examples such as models including competition among predators, prey-mesopredator-superpredator models and Leslie-Gower systems. The results presented were obtained in collaboration with Maurizio Garrione.