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Delay in Structured Population Models.

The aim of this work is to put in evidence the onset of delays, distributed delays and state-dependent delays in models, especialy in threshold models for structured population dynamics. A unified approach to these models is provided, based on solving the corresponding balance law (hyperbolic P.D.E.) along the characteristic lines and showing the common underlying ideas. Size and age-structured models in different fields are presented: fish populations, insect populations, cell proliferation and epidemics. Existence and uniqueness results related to such models will be discussed as well as some results of semigroup's properties , of stability, and bifurcation results.