

Jędrzej Jabłoński

UNIwersytet Warszawski; Wydział Matematyki, Informatyki i Mechaniki
e-mail: jjabłoński@mimuw.edu.pl

Size-structured population model with discontinuous growth rate

Modelling size-structured population of copepods demands allowing growth rate to be discontinuous. This is the consequence of the moulting process, which occurs rapidly after a long period of stagnation. Introducing size structure simplifies modelling predator-dependent mortality. This leads to McKendrick equation system with nonlocal birth rate and mortality and discontinuous growth rate. It can be shown that there exists a solution to this problem and continuity of it (in weak* topology with respect to time) can be proven. Moreover a stable numerical scheme which is weakly convergent is presented.