

## A VIABILITY ANALYSIS FOR STRUCTURED MODEL OF FISHING PROBLEM

M. Jerry and C. Jerry

[jemounir@yahoo.fr](mailto:jemounir@yahoo.fr), [yjechakib@yahoo.fr](mailto:yjechakib@yahoo.fr)

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### ABSTRACT

In this work we study a structured fishing model, basically displaying the two stages of the ages of a fish population, which are in our case juvenile, and adults.

We associate to this model two constraints: one of ecological type ensuring a minimum stock level, the other one of economic type ensuring a minimum income for fishermen. The analytical study focuses on the compatibility between the state constraints and the controlled dynamics. Using the mathematical concept of viability kernel, we define a set of constraints combining the guarantee of consumption and a stock of resources to be preserved at all times.