

On the worst scenario method: Application to uncertain nonlinear differential equations with numerical examples

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The worst scenario problem is characterized by a state equation dependent on an input parameter belonging to an admissible set. Consequently, the solution of state equation depends on the input parameter. Furthermore, the state solution is evaluated by a criterion functional. The goal is to find a maximum of the criterion functional over admissible set.

The general abstract framework of the worst scenario method is applied to problems described by nonlinear differential equations with uncertain coefficients.

Nevertheless, the numerical aspects will be emphasized. Some illustrative numerical examples concerning a one-dimensional problem will be presented.