

Abstract: In this thesis we deal with the basic principles of creating premium rates of non-life insurance. We work with a risk-heterogeneous portfolio containing a specific amount of risk classes. The aim of this study is to find an optimal premium rate for every class. To find these rates we apply optimization models and use non-linear programming. We formulate and solve the problem under certain constraints deducing its optimal solution from which we express and describe different principles for calculating the premium rates for every class. Furthermore, we establish an optimization dual problem and manifest the shape of its optimal solution. In a numerical study using the derived methods we calculate the insurance premium rates where we will use a concrete distribution for particular risks representing aggravated damages.