

Assumptions like uniform distribution, constant force of mortality and the Balducci assumption frequently used for modeling mortality data do not reflect the variability of monthly death rates. Often a phenomenon of winter excess mortality occurs, which is not respected by these assumptions. We shall apply a seasonal mortality assumption, which uses non-negative trigonometric sums for modeling the distribution of monthly death rates. We then apply our findings to the Czech mortality data. We calculate monthly premiums in a short-term life insurance policy and compare the result with results given by the classical assumptions.