This diploma thesis deals with the comparison of the results of simulations of the numerical model WRF in the prediction mode for 9 schemes of boundary layer parameterization and in the climatic mode for 4 selected schemes. The first part of the work is devoted to the WRF model and especially its options for model physics with a focus on boundary layer schemes. The second part describes the experimental setup of the performed simulations. The third part then compares the obtained results for the prediction and climate mode with the measured data.