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The paper discusses a number of refinements to the SL-AV atmospheric model, which allowed substantially reducing systematic errors in reproducing the averaged characteristics of the atmospheric circulation. Particular attention is paid to the wind gustiness parameterization and the calculation procedure of turbulent fluxes in the planet boundary layer. The statistical significance of the influence of the considered changes on the accuracy of atmospheric circulation simulation is concluded based on analyzing the quality of retrospective long-range forecasts with a lead time up to four months (for two seasons) and on studying the averaged characteristics of the model atmosphere in comparison with the ERA5 reanalysis.

Keywords: Atmospheric general circulation model, numerical weather prediction, parameterization, wind gustiness

Tab. 3. Fig. 4. Ref. 32.