



1 Multimodel approach to long-range statistical forecast of surface air temperature over territory of Russia

V. Khan, V. Tischenco and R. Vilfand

Hydrometeorological Research Center of the Russian Federation

11-13, Bolshoy Predtechenskiy Pereulok , Moscow

123242, Russian Federation

Telephone/Fax: (095) 252 09 91, E-mail: khan@mecom.ru

In the present work, the outputs of hydrodynamical models participated in DEMETRA project are used as inputs in an multi-model approach for statistical forecasting of the surface air temperature variability for seasonal time scale over territory of Russia. The statistical stepwise-linear scheme for the surface air temperature forecast is based on using relationships between predictors and predictant. The EOF analysis was applied as a data reduction method for the predictors. Computing experiments have been conducted with the purpose of optimization of the long-term forecast for a season. The useful signal from hydrodynamical prognostic fields in the low and middle troposphere was detected. Results have shown, that the best predictor among others is the parameter H_{1000}^{500} . The forecast quality was evaluated based on the comparison with the air temperature observations in the central Russia for the training period from 1980 to 2001. Analyzing the obtained results, we can conclude that generally, the forecasting skills of the developed statistical model are significantly better than the skill of separate hydrodynamical model. We note that in some cases, the forecast skill of the statistical model is reasonable, while in some other cases it is poor. This work has been supported by the INTAS Project 03-51-5296, RFBR grant 04-05-65099 and

NATO ESP CLG grant 981842.