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Verification of official operational forecasts for the Sochi Olympics

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Despite the diversity of up-to-date hydrodynamic models employed for meteorological support of the XXII Olympic and XI Paralympic Games «Sochi-2014», the operational forecaster was responsible for formulating the final official forecast basing on different model outputs, real-time observations and personal knowledge. In the given conditions and under hard operational time constraints, the forecaster's actions can be considered as decision-making with the loss function depending on the forecast error.

Quality assessments of official operational forecasts for the Coastal Cluster and for several height levels (600, 1000, 1500 and 2000 m) of the Mountain Cluster of the Sochi sport venues prier and during the period of Olympic events are considered. The surface air temperature, wind speed and precipitation forecasts up to 24 hours ahead at hourly intervals were verified against observations from stations located near the defined height levels.

Several verification techniques and scoring rules were applied: 1) diagnostic verification with histograms, q-q diagrams and scatter-plots of conditional extremes, means and quartile ranges; 2) comparative box-and-whiskers analysis for forecasts and observed data with extreme value censoring; 3) scores for continuous parameters (ME and MAE) with 95% confidence intervals; 4) common contingency table statistics for categorized values (e.g. POD, F, TS, ETS, PC, BIAS, PSS), as well as extreme dependency scores (EDS, EDI).

Some aspects of official forecasts performance with respect to automated forecasts are touched upon.