EMPIRICAL AND STATISTICAL ANALYSIS OF UPPER-AIR CLIMATE DATA: DATA SOURCES, PROCESSING METHODS, SOME RESULTS

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The paper considers various aspects of analyzing radiosonde data from the global network, for the goals of free atmosphere climate research, first of all, temperature climatic changes research. Various approaches to selecting subsets of baseline stations, data processing methods, spatial and temporal generalization of radiosonde observational data, are contained in the paper.

Possible causes of discrepancies between the trends of temperature near the land surface and in troposphere are assessed. These discrepancies are known to be one of unresolved problems in modern climatology.

The paper provides lists of available informational resources on the subject mentioned. An essential attention is given to existing methods of inhomogeneity detection and elimination, that are valid for climatic series of upper-air temperature. Among others, the methods that are suggested by author, are included to the assess process.

The refined knowledge about the upper-air temperature changes based on the updating by the most recent observational data for early XXI Century, is provided and discussed.