

APPLICATIONS OF METEOROLOGICAL RADAR POLARIMETERS FOR HYDROLOGICAL RESEARCH IN UZBEKISTAN

Prof. Victor CHUB and Dr. Zokhidjon NAZIROV
Hydrometeorological Research Institute (NIGMI) of UZHIDROMET
72, K. Makhsumov St. - Tashkent 700052 - Uzbekistan
Tel.: +(99871) 1334349. Fax: +(99a871) 1332025
sanigmi@albatros.uz - uzhydromet@meteo.uz

ABSTRACT

At the present time meteorological radars polarimeters are widely used for clouds and precipitations researches, in the field of active affection on clouds to the purposes of precipitation impacts, precipitations intensification and precipitations area redistribution as well as for operational change of precipitations amount over large areas by the use of remote method.

In the report is described a methodic of meteorological radar stations use for the measurements of precipitations intensity, which are mainly derived from vigorous cumulus in the mountainous – valley part of the Republic of Uzbekistan.

The theory and the methodic of recalculation of radar characteristics for rainstorm precipitations reflecting signals into hydrological characteristics of mountainous rivers are elaborated.

Mountainous rivers experimental researches data of hydrological characteristics obtained with the use of meteorological radar polarimeters and the hydrological gauges data of the same rivers for the Autumn-Winter period are analyzing. There are defined the correlation functions between meteorological radar parameters and measured data, the quotients of precipitations intensity calculations on the base of reflected radar signals with the relief parameters consideration are estimated and undiscovered the errors of mountainous rivers runoff value's measurements due to time lags.

The possibility and efficiency of the use of meteorological radar polarimeters in the mountainous river's hydrological characteristics measurements are shown.