

ESTIMATION OF RIVER BASIN EVAPOTRANSPIRATION

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ABSTRACT

There is little information about actual evapotranspiration from river basins with complicated topographies and variable land usage.

In order to estimate reliable actual evapotranspiration, a modified Penman model is proposed in this study. The empirical constants of the conversion factor from potential evaporation to actual evapotranspiration in the model are decided by means of multiple regression analysis.

By combining direct solar radiation, sky diffuse radiation and ground reflected diffuse radiation, the total short-wave radiation on a sloping surface is estimated. The effective long-wave radiation is also estimated by using of air temperature and clearness index.

The estimated annual evapotranspiration is compared with the result obtained by means of the water balance method for the corresponding 6 year periods. The results show the present model provides reliable estimates of monthly and annual river basin evapotranspiration.