

Evaluation of estimation method for regional evaporation using complementary relationship and convective boundary layer model

Yu Iijima[1]; Atsushi Higuchi[2]; Tetsuya Hiyama[3]; Atsuhiko Takahashi[4]; Masanori Nishikawa[5]

[1] Science, Chiba Univ.; [2] CReS, Chiba University, Japan; [3] HyARC, Nagoya Univ.; [4] RIHN; [5] Environ. Studies, Nagoya Univ.

Regional evaporation (E_a) estimated by a combination of complementary relationship and convective boundary layer (CBL) model is compared with local evaporation (E) by means of eddy correlation method in order to explore the feature of the new estimation method. The comparison is carried out half-hourly during observations contain profiles of temperature and vapor density retrieved by microwave radiometer observation data and CBL height detected from wind profiler's profile of received echo.

E_a is about four or five times larger than E . Changing some parameters such as surface roughness length for vapor (z_{0v}) are insignificant. The big difference between E_a and E seems to be partly caused by radiation imbalance between surface fluxes ($H+IE$) and available energy (R_n-G) while the ratio of the former to the latter is about 1/2.