潜水埋深为零时塔里木盆地不同土质潜水蒸发与水面蒸发关系分析

Relationship between water surface evaporation and phreatic water evaporation when phreatic water buried depth is zero for different soil in Tarim River basin

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英文关键词：phreatic water evaporation; water surface evaporation; conversion coefficient; phreatic water evaporation coefficient; Tarim River Basin

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中文摘要：

根据渭干河灌区潜水蒸发试验站和阿克苏水平衡试验站的实际监测资料，分析了E_{601}型蒸发器与E_{20}蒸发皿观测的水面蒸发的关系、不同土质潜水埋深为零时潜水蒸发与水面蒸发的关系，提出了潜水蒸发能力系数的概念，并分析了其与土壤机械组成的关系。结果表明：塔里木盆地非冻结期E_{601}型蒸发器与E_{20}蒸发皿观测的水面蒸发的折算系数变化在0.65～0.78之间；除细砂土外，E_{601}蒸发器观测的水面蒸发强度不能代替潜水埋深为零时的潜水蒸发强度；不同质地土壤的粉粘粒(d<0.02 mm)含量百分数与潜水蒸发能力系数呈指数相关关系。

英文摘要：

The relationship of water surface evaporation observed from E_{601} evaporator and the small type of 20 cm evaporation pan was derived from observed data from 1982 to 2003 at Aksu water balance experimental station. The relationships between E_{601} evaporation calculated by conversion coefficient and phreatic water evaporation when phreatic water table was zero, measured at phreatic water evaporation experimental station of Weiganhe river irrigation district was also analyzed, and the conception of phreatic water evaporation demand coefficient was presented. The correlation relationships between phreatic water evaporation coefficient and the mechanical composition of soil was established. The results showed that conversion coefficient between water surface evaporation observed from E_{601} evaporator and the small type of 20 cm evaporation pan was 0.65～0.78, water surface evaporation observed from E_{601} evaporator could not replace the phreatic water evaporation when phreatic water table was zero except for fine sand, and relationship between phreatic water evaporation coefficient and content of powder-clay particle was exponential.

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