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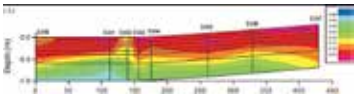
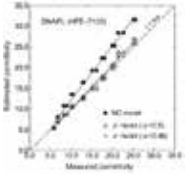
Study on evapotranspiration and soil water content for water resources

Evapotranspiration and soil water content are very important as key factors of hydrologic cycle and water resources. In our laboratory, the following two researches on evapotranspiration and soil water are carried out: (1) There are some methods for estimating the evapotranspiration, it, however, is not so convenient to use those methods because they often needs the meteorological data at two heights. We aim to develop the simple method for estimating evapotranspiration using one heig ht meteorological data. (2) We estimate the potential water resources for agricultural products using soil water content, evapotranspiration, and other data.

The results of these researches would be contribute to not only agriculture and irri gation but also the recent variation of hydrologic cycle.



Developing a technique for estimating soil and groundwater contamination utilizing permittivity, thermal properties, and other physical properties



Soil and groundwater contamination by NAPLs (nonaqueous-phase liquids) has become a serious environmental issue in Japan and around the world. It is difficult to detect or monitor the transport rates of NAPLs under field conditions, because the NAPLs are immiscible with water. In addition, because chemical solutions are often mixed with NAPLs, the detection of contaminant is more complicated. In our laboratory, we aim to develop the fundamental techniques to detect the soil and groundwater contaminated with both NAPLs and chemical solutions using some physical properties such as permittivity, thermal properties, and self - potential.