AN ASYMPTOTIC SOLUTION OF THE SURFACE ATMOSPHERE ELECTRODE EFFECT PROBLEM UNDER WEAK TURBULENT MIXING

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Abstract. The boundary problem describing turbulent electrode effect in surface atmosphere is considered. The approximate asymptotic solutions are designed under weak turbulent mixing for stable and neutral atmosphere stratifications. Finding asymptotic solutions for various types of surface atmosphere stratification are compared with corresponding numerical solutions. It is shown asymptotic solution suitability to describe a real surface atmosphere electrode effect under weak turbulent mixing.

Keywords: atmospheric electricity, mathematical modeling, electrode effect.