Abstract

In Wiener – Hopf factorization technique we use integral transforms to solve boundary value problems. We put the transformed equation in the form

$$U(z)=V(z)$$

where $U(z)$ and $V(z)$ are analytic in two different regions having a portion of the region in common. Then by analytic continuation and Llouville's theorem both sides of the above equation tends to polynomial $f(z)$ having unknown coefficients. The unknown coefficients are determined from boundary conditions and we obtain

$$U(z)=f(z)$$

and $$V(z)=f(z)$$

In chapter I, we have considered Transfer problem in a plane – parallel, semi – infinite atmosphere with planetary phase function and solved the problem by the Laplace Transform and Wiener – Hopf Technique.

In chapter II, we have considered Radiative Transfer problems in a plane–parallel, semi–infinite atmosphere with Rayleigh's phase function together with different forms of the function and solved the problems by the Laplace transform and Wiener – Hopf technique.

In chapter III, we have considered Radiative Transfer problems in a plane – parallel, semi – infinite atmosphere with Pomraning phase function together with different forms of the source function and solved the problems by the Laplace Transform and Wiener – Hopf technique.