

STRAIGHTENED CHARACTERISTICS OF MCKENDRICK-VON FORESTER EQUATION

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We study McKendrick type equations

$$\frac{\partial u}{\partial t} + c(t, \|u\|_{L^1}) \frac{\partial u}{\partial x} = u \lambda(t, x, u, \|u\|_{L^1})$$

with a renewal condition. One of the difficulties is that c is not a constant function. Our purpose is to convert equation to an equivalent problem where the characteristics are straight lines. We use this transformation to prove existence and uniqueness. We will construct a finite difference scheme and we will prove its stability.

REFERENCE

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