$$\dot{T}_\nu^{(1)}(t) + b_\nu T_\nu^{(1)}(t) = -\alpha_\nu g(t) \ , \tag{2a}$$

$$g(t) = T_1^{(1)}(t) \int_0^t T_1^{(1)}(s)\, ds \ , \tag{2b}$$

$$b_1 < 0 < b_2 < b_3 < b_4 \ldots, \quad -\alpha_\nu = (-1)^2\, 8/\pi(2\nu - 1) \times (2\nu + 1)(2\nu - 3) \ , \tag{2c}$$

$$T_1^{(1)}(0) = A, \quad T_\nu^{(1)}(0) = 0, \quad \nu = 2, 3, \ldots . \tag{2d}$$

The solution of Eq. (2a) subject to the initial conditions, Eq. (2d), is

$$T_\nu^{(1)}(t) = \begin{cases} A \exp(-b_1 t) - \alpha_1 \int_0^t \exp[-b_1(t-\tau)]\, g(\tau)\, d\tau \ , \\ -\alpha_\nu \int_0^t \exp[-b_\nu(t-\tau)]\, g(\tau) d\tau \ , \quad \nu = 2, 3, \ldots . \end{cases} \tag{3}$$

In particular (Garabedian and Lynch[2]),

$$T_1^{(1)}(t) = y_m \operatorname{sech}^2 [(2\alpha_1 y_m)^{1/2} (t - t_0)/2] \ , \tag{4a}$$

$$y_m = (b_1^2 + 2\alpha A)/2\alpha_1 \ . \tag{4b}$$

Since $b_1 < b_\nu$,

$$|T_\nu^{(1)}(t)| = \left|-\alpha_\nu \int_0^t \exp[-b_\nu(t-\tau)]\, g(\tau) d\tau\right| < \left| -\alpha_\nu \int_0^t \exp[-b_1(t-\tau)]\, g(\tau) d\tau \right|$$

$$= \left| \frac{-\alpha_\nu}{-\alpha_1} [\dot{T}_1^{(1)}(t) + b_1 T_1^{(1)}(t)] \right| \ . \tag{5}$$

From Eq. (4), it follows that both $T_1^{(1)}$ and $\dot{T}_1^{(1)}$ are uniformly bounded in $0 \leq t < \infty$. Hence, there is a positive constant K such that

$$|T_\nu^{(1)}(t)| \leq |\alpha_\nu| K \quad \nu = 1, 2, \ldots, \quad 0 \leq t < \infty \ . \tag{16}$$

Thus

$$|\phi^{(1)}(x,t)| = |\Sigma_\nu T_\nu^{(1)}(t) \cos(B_\nu x)| \leq K \Sigma_\nu |\alpha_\nu| \ , \quad 0 \leq t < \infty \ , \ |x| \leq L \ . \tag{7}$$

From Eq. (2c), we see that $\alpha_\nu = 0(\nu^{-3})$; hence, the series converges at each point in $0 \leq t < \infty$, $|x| \leq L$ and we have the following

THEOREM: The series representation of the first iterate of Garabedian and Lynch [i.e., the right-hand side of Eq. (1)] converges at each point in $0 \leq t < \infty$, $|x| \leq L$.

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Comments on Canosa's Letter Regarding the Nonlinear Diffusion Equation

The Letter by Canosa on the quasilinear modal expansion procedure fails to take cognizance of the full set of equations necessary for describing violent excursions in the event that spatial distortions of the flux are important. This set of equations is given in Sec. II of Ref. 1; the numerical effect of these corrections in a particular case is discussed in Sec. IV of the same paper.

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[1] R. SCALETTAR, "Space and Energy-Dependent Corrections to the Fuchs-Nordheim Model," GA-4080, General Atomic (October 7, 1963); abbreviated treatment is given in *Proc. Reactor Kinetics and Control,* University of Arizona, 1963, p. 253, TID-7662, USAEC, Technical Information Division (1964).