where A is the shaded area shown in Fig. 1, i.e.

$$j_+(0) = \frac{1}{\pi T_{mf}} \tan^{-1} \left\{ \left(\frac{1 - \gamma}{1 + \gamma} \right)^{1/2} \right\}. \tag{25}$$

For the process A_γ,

$$j_+(0) = \frac{1}{\pi \tau_0 (1 - \gamma)} \tan^{-1} \left\{ \left(\frac{1 - \gamma}{1 + \gamma} \right)^{1/2} \right\}. \tag{26}$$

As γ approaches one, $j_+(0)$ becomes infinite. This will be true not only for zero but for all x. The implication is plain. The Fokker-Planck process is a degenerate process in which the one sided current density of the system is infinite. A Fokker-Planck model for the velocity motion of a colloid particle would describe an infinite number of changes of direction of the particle per unit time. Such a model used to describe voltage fluctuations would imply an infinite number of polarity reversals per second. Since a process $A\gamma$ will afford the same correlation function and equilibrium distribution, *and* finite polarity reversal frequency, it is suggested that such a model may better describe noise, and that the number of zero crossings be regarded as an independent macroscopic physical quantity on an equal footing with τ_0, E_0.

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EVALUATION OF CONSTANTS IN CONFORMAL REPRESENTATION*

By SAMUEL I. PLOTNICK and THOMAS C. BENTON (*Pennsylvania State University*)

In using the Schwarz-Christoffel transformation [1],

$$dz = K \prod_{i=1}^{n} (\zeta - \zeta_i)^{(\alpha_i/\pi)-1} d\zeta = K f(\zeta)\, d\zeta$$

whereby the upper half ζ-plane is mapped into a simple connected polygon, the evaluation of the unknown constant K (if complex $K = ce^{i\lambda}$, c, λ real), is oftentimes tedious. We shall show a simple method of evaluating the unknown constant K by examples, proving first a

THEOREM: *By the Schwarz-Christoffel transformation if ζ_i in the ζ-plane corresponds to two points P_i, Q_i in the z-plane and $\zeta = \zeta_i$ is a simple pole of $f(\zeta)$, then*

$$K = \frac{\text{dist}\,(P_i\,, Q_i)}{\pi i R(\zeta = \zeta_i)}$$

R, denoting residue and dist (P_i, Q_i), denoting the distance between the two points P_i and Q_i.

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PROOF: Since

$$dz = Kf(\zeta)\,d\zeta$$

$$\int_{P_i}^{Q_i} dz = \text{dist}\,(P_i\,,\,Q_i)$$

$$= \lim_{\delta\to 0}\int_0^{\pi} Kf(\zeta_i + \delta e^{i\theta})i\delta e^{i\theta}\,d\theta$$

$$= K\lim_{\delta\to 0}\int_0^{\pi} f(\zeta_i + \delta e^{i\theta})i\delta e^{i\theta}\,d\theta,$$

where $\zeta - \zeta_i = \delta e^{i\theta}$.
Since f has a simple pole at ζ_i the Laurent expansion [2], is

$$f(\zeta) = \frac{R}{\zeta - \zeta_i} + g(\zeta)$$

with $g(\zeta)$ analytic near $\zeta = \zeta_i$. Now,

$$f(\zeta_i + \delta e^{i\theta}) = \frac{R}{\delta e^{i\theta}} + g(\zeta_i + \delta e^{i\theta}).$$

Therefore,

$$\lim_{\delta\to 0}\int_0^{\pi} f(\zeta_i + \delta e^{i\theta})i\delta e^{i\theta}\,d\theta = \lim_{\delta\to 0}\left[Ri\int_0^{\pi} d\theta + i\delta\int_0^{\pi}\sum_{k=0}^{\infty} c_k\delta^k e^{(k+1)i\theta}\,d\theta\right]$$

$$= i\pi R$$

whence

$$K = \frac{\text{dist}\,(P_i\,,\,Q_i)}{\pi i R(\zeta = \zeta_i)}.$$

Consider the transformation described by Milne-Thomson [3], whereby we map the infinite strip on the upper half ζ-plane. The Schwarz-Christoffel transformation gives

$$\frac{dz}{d\zeta} = K\zeta^{-1} \qquad \text{or} \qquad z = K\int\frac{d\zeta}{\zeta} + L.$$

$L = 0$ for $z = 0$ corresponds to $\zeta = 1$.
By the theorem,

$$K = \frac{\text{dist}\,(P_i\,,\,Q_i)}{\pi i R(\zeta = 1)} = \frac{ai}{\pi i(1)} = \frac{a}{\pi}$$

In this case comparison of real and imaginary parts with infinities is avoided.

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