concentration range 0.10 to 3.60 m and combined with the data of Geffcken and of Gibson to obtain an analytical expression for density over the concentration range $0 \leq m \leq 3.6$.

Miller, D. G., and ALBRIGHT, J. G., Analysis of free diffusion in a binary system when the diffusion coefficient is a function of the square root of concentration, J. Phys. Chem. 79, 2061-68 (1975).

Diffusion of even a very dilute electrolyte into pure water is markedly skewed from the "ideal" case of a concentration-independent diffusion coefficient owing to the $c^{1/2}$ dependence of D. This makes uncertain the value of c to which the D, calculated from experiment, refers. The skewing is predicted by poor convergence of the Gosting-Fujita series solution of Fick's equation for this case, particularly when one boundary is at zero concentration. Convergence is too slow for accurate conclusions, but the theory suggests crossover point or averaging methods to determine $D(\bar{c})$. Numerical integration of Fick's equation yields accurate solutions for $0 \geq \beta(2\bar{c})^{1/2} \geq -0.9$. Analysis of these solutions shows that either crossover points or averages can be used to determine $D(\bar{c})$ from skewed Rayleigh fringe patterns. Averaging $D_j$ for $0.27 \leq z^* \leq 1.04$ is recommended for the $c^{1/2}$ dependence to get $D(\bar{c})$ to 0.1%. Analysis of Gouy fringe patterns is not considered here.

PIWINSKII, A. J., and Duba, A., Geothermal exploration: an additional ambiguity in the interpretation of resistivity anomalies, Second U.N. Sym. Develop. and Use of Geothermal Resources, San Francisco, May 20-29, 1975. [UCRL-76405, Abstract]

The electrical conductivity ($\sigma$) of the sodic plagioclase feldspar albite, an important constituent of granitoid rocks, was found to increase several orders of magnitude under anhydrous conditions as a function of time, and presumably, disorder, at temperatures below melting. At temperatures near 1273 K, disordered single-crystal albite is a much better conductor than any silicate for which data have been reported. If the same behavior persists in fluid-saturated regimes, these new laboratory results suggest that large-resistivity anomalies detected by field measurements could represent lateral variations in plagioclase feldspar content under isothermal conditions, rather than partial melt zones or rising thermal plumes. Proponents of either hot, dry rock systems or molten rock as a source of geothermal energy should be cognizant of this additional ambiguity in the interpretation of field-resistivity anomalies.