$$\Delta W_{max} = Vg\varrho \qquad (8)$$

Converting to reduced parameters:

$$\Delta W_{max} = V_r(2\gamma/g\varrho)^{3/2}g\varrho \qquad (9)$$

It is then possible to write eqn. (8) in the following form by using eqn. (6):

$$\frac{\gamma}{\dfrac{\Delta W_{max}}{2\pi(R+r)}} = \frac{1}{1+(R_r-r_r)yr'} \qquad (10)$$

The expression $1/[1+(R_r-r_r)y_r']$ is then, insofar as its deviation from unity is concerned, a measure of the deviation from the approximate eqn. (7). Since y_r' is a function of R_r only, given in the earlier paper[1] as

$$y_r'(R_r) = -1.282R_r + 4.878R_r^{\frac{1}{2}} - 4.770R_r^{1/3} + 1.914R_r^{1/4}$$

it is possible to calculate surface tension values by means of eqn. (10), which may be rewritten:

$$\frac{\gamma}{\dfrac{\Delta W_{max}}{2\pi(R+r)}} = \frac{1}{1+R_r\left(1-\dfrac{r_r}{R_r}\right)y_r'(R_r)} \qquad (11)$$

Thus, when ΔW_{max}, R, r, and ϱ are known, the surface tension value may be calculated by eqn. (11). Since R_r and r_r contain γ as a factor, an iteration procedure is necessary. A suitable starting value for γ is obtained from eqn. (7). The iterations may be avoided by introducing the dimensionless factors R^3/V and r/R. The resulting computation procedure proves, however, more complicated than the iteration procedure, which can easily be undertaken by a computer.

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Fortran Editions of Haltafall and Letagrop

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The complete Algol versions of HALTAFALL[1] and LETAGROP[2–7] appeared in 1967—1970. Since then there has been a demand for the Fortran versions of these programs. The present Fortran programs are straightforward translations of the corresponding Algol versions. We have till now made copies, working on the following computers: CDC 3600, IBM 360/75 and CDC 6600.

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