η/a (the ratio of the length of the gap to the diameter of the antenna) and η/l (the ratio of the length of the gap to the length of the antenna). The classical sinusoidal current distribution is obtained in the limiting case where η/a is large and η/l is small. A general method of successive approximations is set up, but no proof of convergence is given. (Received October 31, 1946.)

78. Gabor Szegö: *The capacity of a circular plate-condenser.*

Consider two thin circular discs of radius a with a common axis and at a distance d, $d/a=q$, charged to constant and opposite potentials, $V=\pm V_1$. If the charges are $\pm Q$, respectively, the constant $C=Q/V_1$ is called the capacity of the condenser. G. Kirchoff (*Gesammelte Abhandlungen*, p. 112) gave the following approximate formula for this important quantity: $a^{-1}C=(4q)^{-1}+(4\pi)^{-1}\log(1/q)+\alpha(q)$, $\limsup \alpha(q)\leqq(4\pi)^{-1}\cdot(\log(16\pi)-1)=K$ as $q\to 0$. Recently (Acad. des Sciences l'URSS, 1932) Ignatowsky gave the following sharper result: $\lim\alpha(q)=(4\pi)^{-1}(\log 8-1/2)=I$. The proofs are in both cases somewhat incomplete. In the present paper Kirchoff's proof is revised by using Dirchlet's principle. Moreover by means of the so-called Thomson principle a very simple proof is given for $\liminf \alpha(q)\geqq I$. Finally the case of thick plates is discussed. (Received November 23, 1946.)

79. H. L. Turrittin: *Stokes multipliers for asymptotic solutions of a certain differential equation.*

If v is a positive integer, the differential equation $d^ny/dx^n-x^vy=0$, $n\geqq 2$, has n independent solutions $y_j=x^j(1+a_{1j}x^p+a_{2j}x^{2p}+\cdots+a_{mj}x^{mp}+\cdots)$, $p=v+n$, convergent for all x. If the complex x-plane, $x=re^{i\theta}$, is divided into $2p$ sectors by the radial lines $\theta=h\pi/p$, $h=0, 1, \cdots$, Trjitzinsky (Acta Math. (1934) pp. 167–226) has shown that to each sector there corresponds n independent solutions $\tilde{y}_k\sim\xi_k^{v(1-n)/2p}\exp\xi_k\{1+b_1/\xi_k+b_2/\xi_k^2+\cdots\}$ where $\xi_k=(n/p)x^{p/n}e^{2\pi ik/n}$. These asymptotic representations are valid *uniformly* throughout the sector (edges included). Therefore there exists a nonsingular linear relationship $y_j=\sum_{k=0}^{n-1}c_{jk}\tilde{y}_k$, $j=0, 1, \cdots, n-1$. These constants c_{jk}, which change from sector to sector, are the *Stokes multipliers* that have been computed. To do so the author borrowed heavily from the Ford-Newsom-Hughes theory of asymptotic expansion (Bull. Amer. Math. Soc. vol. 51 (1945) pp. 456–461). However this theory does not yield directly the desired uniform asymptotic representation in all cases, nor even the desired form when the real part of ξ_k is negative. The F–N–H theory is extended to supply the requisite information. Scheffé (Trans. Amer. Math. Soc. vol. 40 (1936) pp. 127–154) computed two of the n multipliers corresponding to each j. (Received October 7, 1946.)

Geometry

80. L. M. Blumenthal: *Superposability in elliptic space.* II.

Let f denote a one-to-one correspondence between the points of two subsets P, Q of the elliptic space $E_{n,r}$. Two corresponding subsets A_P, B_Q of P, Q, respectively, are called f-superposable provided there exists a congruence Γ of $E_{n,r}$ with itself which gives the same correspondence between A_P and B_Q as f does. The writer defines a space to have superposability order σ provided any two subsets of the space are superposable whenever a one-to-one correspondence f between the points of the subsets exists such that each two corresponding σ-tuples are f-superposable. A principal result of this paper is that $E_{n,r}$ has minimum superposability order $n+1$. Two subsets