

trowski, Bourion, and others is here generalized and unified by the concept of exact harmonic majorant of a sequence of analytic functions. If the function $V(z)$ is harmonic in a region R of the z -plane, if the functions $F_n(z)$ are locally single-valued and analytic in R except for branch points, and if $|F_n(z)|$ is single-valued in R , then $V(z)$ is said to be an exact harmonic majorant of the sequence $F_n(z)$ in R provided one has $\limsup_{n \rightarrow \infty} [\max |F_n(z)|, z \text{ on } Q] = [\max e^{V(z)}, z \text{ on } Q]$ for every continuum Q (not a single point) in R . Applications of this concept involve degree of convergence and properties of the zeros of functions, and include maximal sequences of polynomials and of other rational functions, and many other sequences of analytic functions. (Received March 16, 1942.)

197. M. S. Webster: *A convergence theorem for certain Lagrange interpolation polynomials.*

A convergence theorem for a sequence of Lagrange interpolation polynomials based on the zeros of a sequence of certain Jacobi polynomials is proved. The method and result are similar to a theorem of Grünwald (this Bulletin, vol. 47, (1941), pp. 271-275). (Received March 19, 1942.)

198. Hermann Weyl: *Solution of the simplest boundary-layer problems in hydrodynamics.*

For some simple configurations the hydrodynamic boundary-layer problem can be reduced to a non-linear ordinary differential equation of third order involving a parameter λ . For $\lambda=0$ and $1/2$, solution may be obtained by a rapidly converging process of alternating successive approximations. The general case is attacked by a suitable adaptation of the method of fixed points of transformations in functional spaces. (Received February 28, 1942.)

199. František Wolf: *On the limits of harmonic and analytic functions along radii which form a set of positive measure.*

If $u(r, \theta) = \log |f(re^{i\theta})|$ and $f(z)$ is analytic in the unit circle $r < 1$, $u(r, \theta) \leq M/(1-r)^n$ for any M and n , and $\limsup_{r \rightarrow 1} u(r, \theta) \leq 0$ for $\theta \in E$, $|E| > 0$, then $\limsup u(r, \theta) \leq 0$ in any sector at almost all points of E . Hence if $u(r, \theta)$ is harmonic and satisfies the conditions of the theorem, then $u(r, \theta)$ and its conjugate $v(r, \theta)$ have finite limits in any sector at almost all points of E . This follows from above by the well known results of Privaloff (Recueil Mathématique de Moscou, vol. 91 (1923), p. 232) and Fatou. Another corollary is: If $f(z)$ is analytic in $|z| < 1$, $|f(z)| \leq \exp [M/(1-r)^n]$, and $\lim_{r \rightarrow 1} f(re^{i\theta}) = 0$ for $\theta \in E$, $|E| > 0$, then $f(z) \equiv 0$. (Received March 20, 1942.)

APPLIED MATHEMATICS

200. Stefan Bergman: *Determination of pressure in the two-dimensional flow of an incompressible perfect fluid.*

The author considers a flow of an incompressible perfect fluid around a wing profile. The pressure distribution is determined by the function $W(z)$ which maps the exterior \mathfrak{E} of the wing profile onto the exterior \mathfrak{R} of a circle. Of particular interest is the evaluation of $W(z)$ on the boundary in the neighborhood of the vertex O . Let boundary in the neighborhood of O be formed by two circular arcs CO and BO which make an angle α at O . Let O and D be the intersections of the circles on which the arcs CO and BO lie. Suppose that arcs CD and BD lie inside of the profile (Hypothesis