THE NOVEMBER MEETING IN KNOXVILLE

The five hundred nineteenth meeting of the American Mathematical Society was held at the University of Tennessee in Knoxville, Tennessee on Friday and Saturday, November 18–19, 1955. About 130 persons registered, including 82 members of the Society.

By invitation of the Committee to Select Hour Speakers for Southeastern Sectional Meetings, Professor Sze-Tsen Hu of the University of Georgia addressed the Society Friday evening on the subject *Homotopy groups*, with Professor A. D. Wallace presiding.

Sessions for contributed papers were held Friday afternoon and Saturday morning, Professors Wallace Givens, M. K. Fort, Jr., Tomlinson Fort, A. S. Householder, and S. T. Hu presiding.

Abstracts of the papers presented follow. Those having the letter "*t*" after their numbers were read by title. Where a paper has more than one author, that author whose name is followed by "(p)" presented it. Mr. Simon and Mr. Anderson were introduced by Professor A. D. Wallace, Dr. Campbell by Professor J. H. Roberts, and Mr. Kimura by Professor R. J. Koch.

Algebra and Theory of Numbers

75. A. T. Brauer: *On the Schnirelmann density of the sum of two sequences of which one has positive density.*

Let A and B be sequences of positive integers, and S the sum of A and B. Assume that the Schnirelmann density α of A is positive and that B is a sequence of order h. It was proved by P. Erdös [Acta Arithm. vol. 1 (1936) pp. 197–200] that the Schnirelmann density γ of S satisfies the inequality $\gamma \geqq \alpha\{1+(1-\alpha)/2h\}$. E. Landau [*Über einige neuere Fortschritte der additiven Zahlentheorie*, Cambridge, 1937] showed that the order h can be replaced by the mean order λ. A. Brauer [Math. Zeit. vol. 44 (1938) pp. 212–232] improved this to $\gamma \geqq \alpha\{1+(1-\alpha^{1/2})/\lambda\}$ and S. Selberg [Archiv for Mathematik og Naturvidenskab vol. 47 (1944) pp. 111–118] to $\gamma \geqq \alpha\{1+3(1-\alpha)/4\lambda\}$. Selberg's result is better for $\alpha > 1/9$ and Brauer's result for $\alpha < 1/9$. In this paper these results will be further improved for the case $1/9 \leqq \alpha \leqq 1/2$. (Received October 13, 1955.)

76*t*. Leonard Carlitz: *Resolvents of certain linear groups in a finite field.*

Let Γ denote the group of linear transformations $x' = (ax+b)/(cx+d)$ with coefficients in $GF(q)$ and of determinant 1. Dickson has proved that every absolute invariant of Γ is a rational function of $J = Q^{(q+1)/2}L^{-(q^2-q)/2}$ $(p>2)$, where $L = x^q - x$, $Q = (x^{q^2}-x)/(x^q-x)$; when $q=2$ the divisor 2 in the exponents is omitted. The equation $J(x) = y$ is normal over $GF[q, x]$ with Galois group Γ. It is easy to construct a resolvent of degree $q+1$. The principal object of the present paper is the construction of resolvents of lower degree when they occur. It is well known that Γ can be repre-