

THE NOVEMBER MEETING IN LEXINGTON

The five hundred thirtieth meeting of the American Mathematical Society was held at the University of Kentucky in Lexington, Kentucky on Friday and Saturday, November 30–December 1. About 95 persons registered, including 60 members of the Society.

By invitation of the Committee to Select Hour Speakers for South-eastern Sectional Meetings, there were two hour addresses. Professor L. M. Milne-Thomson, of the Royal Naval College of Greenwich (visiting Professor at Brown University) spoke Friday evening on *Some hydrodynamical methods*, and Professor O. G. Harrold, of the University of Tennessee spoke Saturday morning on *Locally tame curves and surfaces in 3-manifolds*. Professors Tomlinson Fort and H. C. Griffith presided at these sessions.

There were four sessions for contributed papers, Professors R. D. Anderson, V. F. Cowling, M. L. Curtis and Frank Levin 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. Hunter was introduced by Professor R. J. Koch.

ALGEBRA AND THEORY OF NUMBERS

123t. Eckford Cohen: *Congruence representations in algebraic number fields II. Simultaneous linear and quadratic congruences.*

Let P be an odd prime ideal in a finite extension F of the rational field. In this paper the author determines the number of simultaneous solutions $N_s(m, n)$ of the pair of congruences $m \equiv \alpha_1 x_1^2 + \dots + \alpha_s x_s^2$, $n \equiv \beta_1 x_1 + \dots + \beta_s x_s \pmod{P^\lambda}$ where m and n are arbitrary integers of F and the α_i, β_i are integers of F prime to P . The case $\lambda=1$ was treated earlier, using the terminology of Galois fields (Bull. Amer. Math. Soc. Abstract 62-1-3). The method of the paper is based on the elementary theory of Cauchy-Gauss sums in F . Explicit results for $N_s(m, n)$ are deduced, and it is shown that the least value of s such that $N_s(m, n) > 0$ for all odd prime-power ideals P^λ , for all m, n , and all α_i, β_i prime to P is the value $s=5$. This contrasts with the minimal value $s=4$ under the restriction $\lambda=1$. (Received September 24, 1956.)

124. W. E. Deskins: *A note on group representations.*

A subgroup H of a finite group G is defined to have *property I* if each irreducible representation module of G (over the field F) remains irreducible when considered as a representation module for H . The following results are obtained: THEOREM 1. Let H have *property I* and let g denote the order of G . Then H is a normal subgroup and contains the commutator subgroup of G provided (1) the characteristic of F is relatively prime to g ; (2) $g = qp^a$, $(p, q) = 1$, p the characteristic of F , and the order of H is p^a ; or (3) the radical of the group-ring of G is generated by the radical of the group-ring of H . Examples which demonstrate that the theorem is not necessarily true if (1), (2) or