

## ABSTRACTS OF PAPERS

SUBMITTED FOR PRESENTATION TO THE SOCIETY

The following papers have been submitted to the Secretary and the Associate Secretaries of the Society for presentation at meetings of the Society. They are numbered serially throughout this volume. Cross references to them in the reports of the meetings will give the number of this volume, the number of this issue, and the serial number of the abstract.

446. Warren Ambrose: *Change of velocities in a continuous ergodic flow*. Preliminary report.

A flow is a 1-parameter group  $T_t$ ,  $-\infty < t < \infty$ , of measure preserving transformations of a space into itself. It is measurable (continuous) if  $T_t P$  is a measurable (continuous)  $(P, t)$ -function. If  $S$  is any measure preserving transformation of a space  $\Omega$  into itself, then a flow can be "built on  $S$ " as follows: consider the product space of  $\Omega$  with  $0 \leq x < 1$ , with measure defined multiplicatively. Then define the flow by  $T_t(P, x) = (S^n P, t+x-n)$ , where  $n$  is equal to the integral part of  $t+x$ . It is shown that for any continuous ergodic flow on a separable metric space of finite measure the velocities along the streamlines can be altered to obtain a flow built on a measure preserving transformation, that is, a subspace of the original space can be found whose product with  $0 \leq x < 1$  is, with respect to measure properties, the original space (where measure on that original space is now the measure invariant under the altered flow) and such that the altered flow is built on a measure preserving transformation on this subspace. It is intended to use this theorem in a study of spectral properties which are invariant under a change of velocities. (Received August 5, 1940.)

447. Salomon Bochner and I. J. Schoenberg: *On positive definite functions on compact spaces*.

The expansion theorem for positive definite functions on finite-dimensional euclidean spheres, as stated in *On positive definite functions on spheres* by I. J. Schoenberg (abstract 46-11-474), is contained in a general theorem concerning such functions on compact spaces on which a transitive group of transformations is defined. In the general case, as in the special case, the function is given as a function of two independent points which in addition to being positive definite is invariant under simultaneous transformations of both points by the same group element. (Received August 5, 1940.)

448. D. G. Bourgin and Benjamin Epstein: *A class of kernels generated by a Laplace-Mellin transformation*.

The kernels discussed include those of the type of the generalized zeta function. The authors treat the inversion in  $L_2$  of integrals with these kernels. (Received August 5, 1940.)

449. G. W. Brown: *Reduction of certain composite statistical hypotheses*.

The results obtained make it possible to reduce a large class of "composite" statis-