

geometric functions respectively. To treat these topics thoroughly the author is obliged to examine at length some purely group-theoretic problems, such as unitary representations and the decomposition of tensor products into irreducible components. These results are of interest in themselves, apart from their applications to special function theory.

Chapter 6 is concerned with the 6-parameter, 3-dimensional Euclidean group. The irreducible representations of the associate Lie algebra are obtained but, because of computational difficulties, detailed applications are omitted. We expect this gap to be filled in the future.

Chapter 7 describes the Infeld-Hull factorization method. The author shows that the representation theory of the four Lie groups examined in the preceding four chapters is equivalent to the Infeld-Hull factorization method. This equivalence does not diminish the importance of Miller's contributions, but serves to show that the results of the preceding chapters form a complete unit in a certain sense.

In Chapter 8 the author considers the problem of classifying the realizations of a given Lie algebra, with a view to ascertaining the extent to which the preceding chapters are complete and the prospects for further research. It is the most difficult part of the book, requiring some knowledge of the cohomology theory of Lie algebras.

The last chapter introduces the reader to two new Lie algebras. A 5-parameter Lie algebra is defined and its irreducible representations obtained. Some interesting identities involving Hermite and Weber functions result. A 3-parameter Lie algebra is defined and treated similarly. The applications are generalizations of identities involving Bessel functions. We infer that the techniques developed in the book are not limited to special functions.

It is a pleasure to recommend Miller's book to all who have more than a casual interest in the special functions and to adventurers seeking new pastures.

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Rapport sur la cohomologie des groupes by Serge Lang. Benjamin, New York, 1967. viii+260 pp. \$8.00; paper: \$3.95.

This is a report written in 1959 for the use of Bourbaki. Despite its belated public appearance, it still provides a fairly complete survey of the general features of the cohomology theory of groups. A large part of this theory developed in connection with its application to class field theory. In particular, the account given here contains