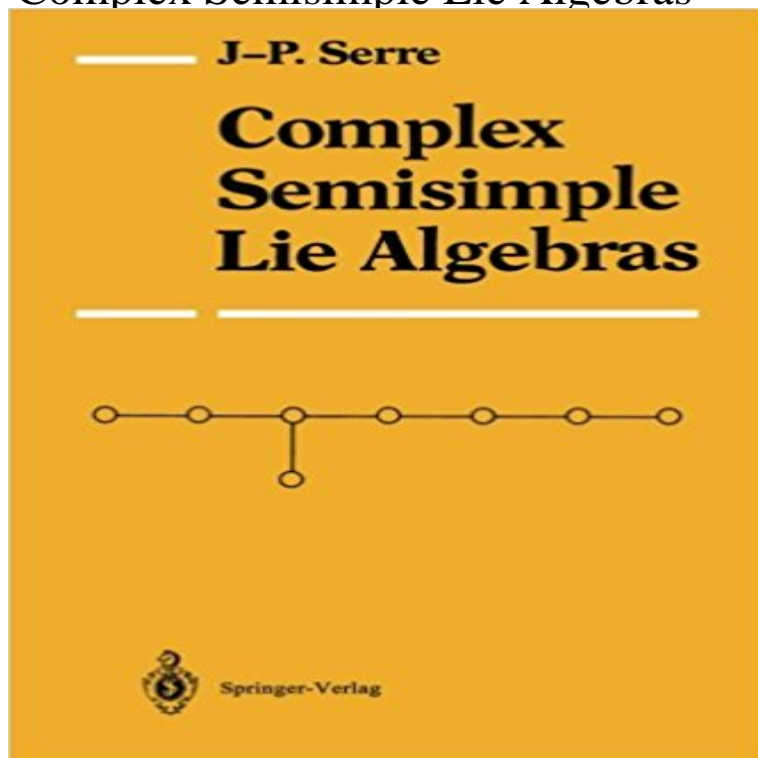


# Complex Semisimple Lie Algebras



These notes are a record of a course given in Algiers from 10th to 21st May, 1965. Their contents are as follows. The first two chapters are a summary, without proofs, of the general properties of nilpotent, solvable, and semisimple Lie algebras. These are well-known results, for which the reader can refer to, for example, Chapter I of Bourbaki or my Harvard notes. The theory of complex semisimple algebras occupies Chapters III and IV. The proofs of the main theorems are essentially complete; however, I have also found it useful to mention some complementary results without proof. These are indicated by an asterisk, and the proofs can be found in Bourbaki, Groupes et Algebres de Lie, Paris, Hermann, 1960-1975, Chapters IV-VIII. A final chapter shows, without proof, how to pass from Lie algebras to Lie groups (complex-and also compact). It is just an introduction, aimed at guiding the reader towards the topology of Lie groups and the theory of algebraic groups. I am happy to thank MM. Pierre Gigord and Daniel Lehmann, who wrote up a first draft of these notes, and also Mlle. Françoise Pecha who was responsible for the typing of the manuscript.

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