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Autore	Gorodnik Alexander <1975->	
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Nota di contenuto	Frontmatter -- Contents -- Preface -- Chapter One. Main results: Semisimple Lie groups case -- Chapter Two. Examples and applications -- Chapter Three. Definitions, preliminaries, and basic tools -- Chapter Four. Main results and an overview of the proofs -- Chapter Five. Proof of ergodic theorems for S-algebraic groups -- Chapter Six. Proof of ergodic theorems for lattice subgroups -- Chapter Seven. Volume estimates and volume regularity -- Chapter Eight. Comments and complements -- Bibliography -- Index	
Sommario/riassunto	The results established in this book constitute a new departure in ergodic theory and a significant expansion of its scope. Traditional ergodic theorems focused on amenable groups, and relied on the existence of an asymptotically invariant sequence in the group, the resulting maximal inequalities based on covering arguments, and the transference principle. Here, Alexander Gorodnik and Amos Nevo develop a systematic general approach to the proof of ergodic theorems for a large class of non-amenable locally compact groups and	

their lattice subgroups. Simple general conditions on the spectral theory of the group and the regularity of the averaging sets are formulated, which suffice to guarantee convergence to the ergodic mean. In particular, this approach gives a complete solution to the problem of establishing mean and pointwise ergodic theorems for the natural averages on semisimple algebraic groups and on their discrete lattice subgroups. Furthermore, an explicit quantitative rate of convergence to the ergodic mean is established in many cases. The topic of this volume lies at the intersection of several mathematical fields of fundamental importance. These include ergodic theory and dynamics of non-amenable groups, harmonic analysis on semisimple algebraic groups and their homogeneous spaces, quantitative non-Euclidean lattice point counting problems and their application to number theory, as well as equidistribution and non-commutative Diophantine approximation. Many examples and applications are provided in the text, demonstrating the usefulness of the results established.