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Nota di contenuto	Introduction -- Hermitian vector bundles over arithmetic curves -- -Invariants of Hermitian vector bundles over arithmetic curves -- Geometry of numbers and -invariants -- Countably generated projective modules and linearly compact Tate spaces over Dedekind rings -- Ind- and pro-Hermitian vector bundles over arithmetic curves -- -Invariants of infinite dimensional Hermitian vector bundles: denitions and first properties -- Summable projective systems of Hermitian vector bundles and niteness of -invariants -- Exact sequences of infinite dimensional Hermitian vector bundles and subadditivity of their -invariants -- Infinite dimensional vector bundles over smooth projective curves -- Epilogue: formal-analytic arithmetic surfaces and algebraization -- Appendix A. Large deviations and Cramér's theorem -- Appendix B. Non-complete discrete valuation rings and continuity of linear forms on prodiscrete modules -- Appendix C. Measures on countable sets and their projective limits -- Appendix D. Exact categories -- Appendix E. Upper bounds on the dimension of spaces of holomorphic sections of line bundles over compact complex manifolds -- Appendix F. John ellipsoids and finite dimensional normed spaces.

Sommario/riassunto

This book presents the most up-to-date and sophisticated account of the theory of Euclidean lattices and sequences of Euclidean lattices, in the framework of Arakelov geometry, where Euclidean lattices are considered as vector bundles over arithmetic curves. It contains a complete description of the theta invariants which give rise to a closer parallel with the geometric case. The author then unfolds his theory of infinite Hermitian vector bundles over arithmetic curves and their theta invariants, which provides a conceptual framework to deal with the sequences of lattices occurring in many diophantine constructions. The book contains many interesting original insights and ties to other theories. It is written with extreme care, with a clear and pleasant style, and never sacrifices accessibility to sophistication. .