1.	Record Nr.	UNINA9910299766403321
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	Titolo	Value Functions on Simple Algebras, and Associated Graded Rings / / by Jean-Pierre Tignol, Adrian R. Wadsworth
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
	ISBN	3-319-16360-4
	Edizione	[1st ed. 2015.]
	Descrizione fisica	1 online resource (652 p.)
	Collana	Springer Monographs in Mathematics, , 1439-7382
	Disciplina	512.4
	Soggetti	Associative rings Rings (Algebra) Algebra Field theory (Physics) Associative Rings and Algebras Field Theory and Polynomials
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Description based upon print version of record.
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Valuations on Division Rings -- Graded Algebra -- Value Functions -- Existence and Fundamental Properties of Gauges -- Graded and Valued Field Extensions -- Brauer Groups -- Total Ramifcation -- Division Algebras over Henselian Fields -- Subfields and Splitting Fields of Division Algebras -- Indecomposable Division Algebras -- Computation of SK1(D) -- The Essential Dimension of Central Simple Algebras.
	Sommario/riassunto	This monograph is the first book-length treatment of valuation theory on finite-dimensional division algebras, a subject of active and substantial research over the last forty years. Its development was spurred in the last decades of the twentieth century by important advances such as Amitsur's construction of noncrossed products and Platonov's solution of the Tannaka-Artin problem. This study is particularly timely because it approaches the subject from the perspective of associated graded structures. This new approach has been developed by the authors in the last few years and has significantly clarified the theory. Various constructions of division

algebras are obtained as applications of the theory, such as noncrossed products and indecomposable algebras. In addition, the use of valuation theory in reduced Whitehead group calculations (after Hazrat and Wadsworth) and in essential dimension computations (after Baek and Merkurjev) is showcased. The intended audience consists of graduate students and research mathematicians.