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	Titolo	Geometry: from Isometries to Special Relativity [[electronic resource] /] / by Nam-Hoon Lee
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
	ISBN	3-030-42101-5
	Edizione	[1st ed. 2020.]
	Descrizione fisica	1 online resource (XIII, 258 p. 92 illus., 18 illus. in color.)
	Collana	Undergraduate Texts in Mathematics, , 0172-6056
	Disciplina	516
	Soggetti	Hyperbolic geometry
		Convex geometry
		Discrete geometry
		Mathematical physics
		Hyperbolic Geometry
		Convex and Discrete Geometry
		Theoretical, Mathematical and Computational Physics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Euclidean Plane -- Sphere -- Stereographic Projection and Inversions -- Hyperbolic Plane -- Lorentz-Minkowski Plane -- Geometry of Special Relativity -- Answers to Selected Exercises -- Index.
	Sommario/riassunto	This textbook offers a geometric perspective on special relativity, bridging Euclidean space, hyperbolic space, and Einstein's spacetime in one accessible, self-contained volume. Using tools tailored to undergraduates, the author explores Euclidean and non-Euclidean geometries, gradually building from intuitive to abstract spaces. By the end, readers will have encountered a range of topics, from isometries to the Lorentz–Minkowski plane, building an understanding of how geometry can be used to model special relativity. Beginning with intuitive spaces, such as the Euclidean plane and the sphere, a structure theorem for isometries is introduced that serves as a foundation for increasingly sophisticated topics, such as the hyperbolic plane and the Lorentz–Minkowski plane. By gradually introducing tools throughout, the author offers readers an accessible pathway to

visualizing increasingly abstract geometric concepts. Numerous exercises are also included with selected solutions provided. Geometry: from Isometries to Special Relativity offers a unique approach to non-Euclidean geometries, culminating in a mathematical model for special relativity. The focus on isometries offers undergraduates an accessible progression from the intuitive to abstract; instructors will appreciate the complete instructor solutions manual available online. A background in elementary calculus is assumed.