

1. Record Nr.	UNINA9910958721903321
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Titolo	The ambient metric / / Charles Fefferman, C. Robin Graham
Pubbl/distr/stampa	Princeton, : Princeton University Press, 2012
ISBN	9786613290953 9781283290951 1283290952 9781400840588 1400840589
Edizione	[Course Book]
Descrizione fisica	1 online resource (124 p.)
Collana	Annals of mathematics studies ; ; no. 178
Classificazione	MAT012020
Altri autori (Persone)	Graham C. Robin <1954->
Disciplina	516.3/7
Soggetti	Conformal geometry Conformal invariants
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	Front matter -- Contents -- Chapter One. Introduction -- Chapter Two. Ambient Metrics -- Chapter Three. Formal Theory -- Chapter Four. Poincaré Metrics -- Chapter Five. Self-dual Poincaré Metrics -- Chapter Six. Conformal Curvature Tensors -- Chapter Seven. Conformally Flat and Conformally Einstein Spaces -- Chapter Eight. Jet Isomorphism -- Chapter Nine. Scalar Invariants -- Bibliography -- Index
Sommario/riassunto	This book develops and applies a theory of the ambient metric in conformal geometry. This is a Lorentz metric in $n+2$ dimensions that encodes a conformal class of metrics in n dimensions. The ambient metric has an alternate incarnation as the Poincaré metric, a metric in $n+1$ dimensions having the conformal manifold as its conformal infinity. In this realization, the construction has played a central role in the AdS/CFT correspondence in physics. The existence and uniqueness of the ambient metric at the formal power series level is treated in detail. This includes the derivation of the ambient obstruction tensor and an explicit analysis of the special cases of conformally flat and conformally Einstein spaces. Poincaré metrics are introduced and shown to be equivalent to the ambient formulation. Self-dual Poincaré metrics in four dimensions are considered as a special case, leading to

a formal power series proof of LeBrun's collar neighborhood theorem proved originally using twistor methods. Conformal curvature tensors are introduced and their fundamental properties are established. A jet isomorphism theorem is established for conformal geometry, resulting in a representation of the space of jets of conformal structures at a point in terms of conformal curvature tensors. The book concludes with a construction and characterization of scalar conformal invariants in terms of ambient curvature, applying results in parabolic invariant theory.
