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Nota di contenuto	Geometric Aspects of Dwork Theory. Volume I -- Front matter -- Table of Contents of Volume I -- The Mathematical Publications of Bernard Dwork -- Exponential sums and generalized hypergeometric functions. I: Cohomology spaces and Frobenius action -- Exponential sums and free hyperplane arrangements -- Sur la conjecture des p-courbures de Grothendieck-Katz et un problème de Dwork -- Hilbert modular varieties of low dimension -- On Dwork cohomology for singular hypersurfaces -- On Dwork cohomology and algebraic D-modules -- An introduction to the theory of p-adic representations -- Smooth p-adic analytic spaces are locally contractible. II -- Germs of analytic varieties in algebraic varieties: canonical metrics and arithmetic algebraization theorems -- Thirty years later -- Approximation of eigenforms of infinite slope by eigenforms of finite slope -- Crystalline cohomology of singular varieties -- Stacks of twisted modules and integral transforms -- On some rational generating series occurring in arithmetic geometry -- Compactifications arithmétiques des variétés de Hilbert et formes modulaires de Hilbert pour $1(c, n)$ -- Geometric Aspects of Dwork Theory. Volume II -- Front matter Table of Contents of Volume II -- Variétés et formes modulaires de Hilbert

arithmétiques pour  $1(c, n)$  -- Introduction to p-adic q-difference equations (weak Frobenius structure and transfer theorems) -- An introduction to the Riemann-Hilbert correspondence for unit F-crystals -- Introduction to L-functions of F-isocrystals -- Notes on some t-structures -- Non-vanishing modulo p of Hecke L-values -- On semistable reduction and the calculation of nearby cycles -- Inequalities related to Lefschetz pencils and integrals of Chern classes -- Full faithfulness for overconvergent F-isocrystals -- Frobenius action, F-isocrystals and slope filtration -- Conjecture on Abbes-Saito filtration and Christol-Mebkhout filtration -- Transformation de Fourier des D-modules arithmétiques I -- Boyarsky principle for D-modules and Loeser's conjecture -- Cohomological descent in rigid cohomology -- Monodromie locale et fonctions Zêta des log schémas -- Trace et dualité relative pour les D-modules arithmétiques -- Geometric moment zeta functions

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Sommario/riassunto

This two-volume book collects the lectures given during the three months cycle of lectures held in Northern Italy between May and July of 2001 to commemorate Professor Bernard Dwork (1923 - 1998). It presents a wide-ranging overview of some of the most active areas of contemporary research in arithmetic algebraic geometry, with special emphasis on the geometric applications of the p-adic analytic techniques originating in Dwork's work, their connection to various recent cohomology theories and to modular forms. The two volumes contain both important new research and illuminating survey articles

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