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Nota di contenuto	Cover -- Title page -- Introduction -- Grothendieck conjecture for - difference equations -- Intrinsic Galois groups -- Comparison with Malgrange-Granier Galois theory for non-linear differential equations -- Acknowledgments -- Part 1. Introduction to -difference equations -- Chapter 1. Generalities on -difference modules -- 1.1. Basic definitions -- 1.2. -difference modules, systems and equations -- 1.3. Some remarks on solutions -- 1.4. Trivial -difference modules -- Chapter 2. Formal classification of singularities -- 2.1. Regularity -- 2.2. Irregularity -- Part 2. Triviality of -difference equations with rational coefficients -- Chapter 3. Rationality of solutions, when α is an algebraic number -- 3.1. The case of α algebraic, not a root of unity -- 3.2. Global nilpotence. -- 3.3. Proof of Theorem 3.8 (and of Theorem 3.6) -- Chapter 4. Rationality of solutions when α is transcendental -- 4.1. Statement of the main result -- 4.2. Regularity and triviality of the exponents -- 4.3. Proof of Theorem 4.2 -- 4.4. Link with iterative - difference equations -- Chapter 5. A unified statement -- Part 3.

Intrinsic Galois groups -- Chapter 6. The intrinsic Galois group -- 6.1. Definition and first properties -- 6.2. Arithmetic characterization of the intrinsic Galois group -- 6.3. Finite intrinsic Galois groups -- 6.4. Intrinsic Galois group of a σ -difference module over $\mathbb{C}(t)$, for $\sigma=0,1$ -- Chapter 7. The parametrized intrinsic Galois group -- 7.1. Differential and difference algebra -- 7.2. Parametrized intrinsic Galois groups -- 7.3. Characterization of the parametrized intrinsic Galois group by curvatures -- 7.4. Parametrized intrinsic Galois group of a σ -difference module over $\mathbb{C}(t)$, for $\sigma=0,1$ -- 7.5. The example of the Jacobi Theta function -- Part 4. Comparison with the non-linear theory. Chapter 8. Preface to Part 4. The Galois σ -groupoid of a σ -difference system, by Anne Granier -- 8.1. Definitions -- 8.2. A bound for the Galois σ -groupoid of a linear σ -difference system -- 8.3. Groups from the Galois σ -groupoid of a linear σ -difference system -- Chapter 9. Comparison of the parametrized intrinsic Galois group with the Galois σ -groupoid -- 9.1. The Kolchin closure of the Dynamics and the Malgrange-Granier groupoid -- 9.2. The groupoid $\text{Gal}\{\sigma\}$ -- 9.3. The Galois σ -groupoid $\text{Gal}_\sigma\{\sigma\}$ vs the intrinsic parametrized Galois group -- 9.4. Comparison with known results -- Bibliography -- Back Cover.

Sommario/riassunto

"The Galois theory of difference equations has witnessed a major evolution in the last two decades. In the particular case of q -difference equations, authors have introduced several different Galois theories. In this memoir we consider an arithmetic approach to the Galois theory of q -difference equations and we use it to establish an arithmetical description of some of the Galois groups attached to q -difference systems"--
