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Nota di contenuto	-- Mathematical Scale Theory and Tuning. -- Quarter-Tone Music: A Tuning System Rooted in Natural Harmonic Series. -- An Exploration of the Discontinuous-Continuous Fusion in Yuunohui'tlapoa for Keyboard. -- Rhythm Analysis and Rhythm Generation. -- On Brazilian Drum Claves and Generating Rhythm Patterns out of Them. -- What Are "Good? Rhythms? Generating Rhythms Based on the Properties Set Out in The Geometry of Musical Rhythm. -- Euclidean Rhythm with Palindromic Rests. -- Categorical and Algebraic Approaches to Music. -- Finding homometric multiplets. -- The Sandwich-Lemma: The recursive structure of super-syntonic and

super-diatonic automorphisms. -- Hidden Categories: a New Perspective on Lewin's Generalized Interval Systems and Klumpenhouwer Networks. -- Voice and Math: the Art of Singing in Light of Mathematical Music Theory. -- Structural and Transformational Relations between Z-related Hexachords. -- Quantum Music. -- Quantum Memory and Mathematical Gestures: two Perspectives on Verdi and Wagner. -- Intro to Quantum Harmony: Chords in Superposition. -- Quantum Tonality: A Mathemusical Playground. -- Theory and Algorithms for Melodic- Harmonic Analysis and Generation. -- Melody and Variation Generation Through KAM Theory. -- Modal Pitch Space: A Computational Model of Melodic Pitch Attraction in Folk Music. -- Persistent homology and harmonic analysis. -- Melodic Contour Generation with Spline Models of Cycles. -- Geometric Approaches to Musical Algorithms and Microtonality. -- I-Shaped Tiles in the Tonnetz. -- Advanced Polyphonic Music Pattern Matching Algorithms with Timing Invariances. -- Tonnetze and Tori for the 19-, 31-, and 53-Tone Equal Temperaments. -- A Model of Scores as Abstract Syntactic Trees. -- Piston words. -- Fourier Analysis for Music. -- DFT and Persistent Homology for Topological Musical Data Analysis. -- Fourier (Common-tone) Phase Spaces are in Tune with Variational Autoencoders? Latent Space. -- Fourier Qualia Wavescapes: Hierarchical Analyses of Set Class Quality and Ambiguity. -- Similarity and Distance Measures for Music. -- Towards measuring the distances of chords of different cardinalities. -- Assessing the compatibility between musical performance and tuning system. -- Short Papers. -- Advanced Visualization Techniques for Music Theory. -- Recurrence Relations: Rhythms. -- Mining Significant Sequential Contrast Patterns. -- Bits and Beats: computing rhythmic information as bitwise operations optimized for Machine Learning. -- Regular Temperament Theory: Exploring the Landscape between JI and ETs with Linear Algebra. -- Exploring mode Identification in Irish folk music with unsupervised machine learning and template-based techniques. -- Communication-Performances. -- Of All Interval Tetrachords and octatonic scales. -- Stages in my Vuza Rhythmic Canons. -- Configurations of Disjoint Augmentation Canons. -- Sonification of Wigner functions: case study of intense light-matter interactions. -- Tribute to Yves Hellegouarch. -- A Tribute to Yves Hellegouarch.

Sommario/riassunto

This book constitutes the refereed proceedings of the 9th International Conference on Mathematics and Computation in Music, MCM 2024, held in Coimbra, Portugal, during June 18–21, 2024. The 30 full papers and 9 short papers included in this book were carefully reviewed and selected from 45 submissions. They were organized in topical sections as follows: mathematical scale theory and tuning; rhythm analysis and rhythm generation; categorical and algebraic approaches to music; quantum music; theory and algorithms for melodic- harmonic analysis and generation; geometric approaches to musical algorithms and microtonality; fourier analysis for music; similarity and distance measures for music; short papers; communication-performances; and tribute to Yves Hellegouarch.