1. Record Nr.   UNINA9910337560903321

   Titolo   Mathematics and Computation in Music : 7th International Conference, MCM 2019, Madrid, Spain, June 18–21, 2019, Proceedings / / edited by Mariana Montiel, Francisco Gomez-Martin, Octavio A. Agustín-Aquino

   Pubbl/distr/stampa   Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019

   ISBN   3-030-21392-7

   Edizione   [1st ed. 2019.]

   Descrizione fisica   1 online resource (XII, 399 p. 283 illus., 51 illus. in color.)

   Collana   Lecture Notes in Artificial Intelligence, , 2945-9141 ; ; 11502

   Disciplina   780.285
                        781.0151

   Soggetti   Digital humanities
                        Artificial intelligence
                        Algorithms
                        Music
                        Digital Humanities
                        Artificial Intelligence

   Lingua di pubblicazione   Inglese

   Formato   Materiale a stampa

   Livello bibliografico   Monografia

   Nota di contenuto   Plenary talks -- Contrapuntal Aspects of the Mystic Chord and Scriabin's Piano Sonata No. 5 -- ComMute—Towards a Computational Musical Theory of Everything -- Algebraic and other Abstract Mathematical Approaches to Understanding Musical Objects -- Groupoids and Wreath Products of Musical Transformations: a Categorical Approach from poly-Klumpenhouwer Networks -- Fourier Phase and Pitch-Class Sum -- Categories, Musical Instruments, and Drawings: A Unification Dream -- Tropical Generalized Interval Systems -- Shall we (math and) dance? -- Special Session: Remanaging Riemann: Mathematical Music Theory as "Experimental Philology"? -- Decontextualizing Contextual Inversion -- From Schritte and Wechsel to Coxeter Groups -- Exploring the Syntonic Side of Major-Minor Tonality -- Embedded Structural Modes: Unifying Scale Degrees and Harmonic Functions -- Non-Contextual SQZ Transformations -- The Hierarchy of Rameau Groups -- Distance Diatonic Neighbors and Inter-Diatonic Shortcuts? --

Constraint-Based Systems of Triads and Seventh Chords, and Parsimonious Voice-Leading -- Octave Division -- Distributional Analysis of n-dimensional Feature Space for 7-note Scales in 22-TET -- Filtration of pitch-class sets complexes -- Computer-based Approaches to Composition and Score Structuring -- Synesthesizer: physical modelling and machine learning for a color-based synthesizer -- Mercury ®: A software based on fuzzy clustering for computer-assisted composition -- A Parse-based Framework for Coupled Rhythm Quantization and Score Structuring -- Reinterpreting and extending Anatol Vieru's Periodic Sequences through the Cellular Automata formalisms -- Models for Music Cognition and Beat Tracking -- Surprisal, liking, and musical affect -- Autocorrelation of Pitch-Event Vectors in Meter Finding -- The Envelopes of Consonant Intervals and Chords in Just Intonation and Equal Temperament -- Maximally Even Tilings -- Short Papers -- Distributed Vector Representations of Folksong Motifs -- Visualizing Temperaments: Squaring the Circle? -- Music corpus analysis using unwords -- Maths, Computation and Flamenco: overview and challenges -- Formalization of Voice-Leadings and the Nabla Algorithm -- Computational Music Therapy -- Special Session on the Pedagogy of Mathematical Music Theory -- Insiders' Choice: Studying Pitch Class Sets through their Discrete Fourier Transformations -- Have Fun with Math and Music! -- Teaching Music with Mathematics: a Pilot Study -- Integrated Music and Math Projects in Secondary Education.

Sommario/riassunto	This book constitutes the thoroughly refereed proceedings of the 7th International Conference on Mathematics and Computation in Music, MCM 2019, held in Madrid, Spain, in June 2019. The 22 full papers and 10 short papers presented were carefully reviewed and selected from 48 submissions. The papers feature research that combines mathematics or computation with music theory, music analysis, composition, and performance. They are organized in topical sections on algebraic and other abstract mathematical approaches to understanding musical objects; remanaging Riemann: mathematical music theory as "experimental philosophy"?; octave division; computer-based approaches to composition and score structuring; models for music cognition and beat tracking; pedagogy of mathematical music theory. The chapter "Distant Neighbors and Interscalar Contiguities" is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.