Contents

Algebraic Models

Primal-Circular Substitutions .................................................. 3
   Marcus D. Booth

On the Group of Transformations of Classical Types of Seventh Chords . . . 13
   Sonia Cannas, Samuele Antonini, and Ludovico Pernazza

Pairwise Well-Formed Modes and Transformations .......................... 26
   David Clampitt and Thomas Noll

Homometry in the Dihedral Groups: Lifting Sets from \( \mathbb{Z}_n \) to \( D_n \) ................. 38
   Grégoire Genuys and Alexandre Popoff

A Symmetric Quantum Theory of Modulation in \( \mathbb{Z}_{20} \) ................. 50
   J. David Gómez-Téllez, Emilio Lluis-Puebla, and Mariana Montiel

Almost Difference Sets in Transformational Music Theory ................... 63
   Robert W. Peck

Algebra of Harmony: Transformations of Just Consonances .................. 76
   Marek Žabka

Computer Assisted Performance

Developing Software for Dancing Tango in Compás .......................... 91
   Emmanuel Amiot, Jean-Philippe Lerat, Bérenger Recoules, and Valérie Szabo

Using Inharmonic Strings in Musical Instruments ........................... 104
   Kevin Hobby, William A. Sethares, and Zhenyu Zhang

Real-Time Compositional Procedures for Mediated Soloist-Ensemble
Interaction: The Comprovisador ................................................. 117
   Pedro Louzeiro

Fourier Analysis

Strange Symmetries ............................................................... 135
   Emmanuel Amiot

Interval Content vs. DFT .......................................................... 151
   Emmanuel Amiot
Probing Questions About Keys: Tonal Distributions Through the DFT
Jason Yust

Gesture Theory

Abstract Gestures: A Unifying Concept in Mathematical Music Theory
Juan Sebastián Arias

Mathematical Music Theory and the Musical Math Game—Two Creative Ontological Switches
Guerino Mazzola

Graph Theory and Combinatorics

Hamiltonian Graphs as Harmonic Tools
Giovanni Albini and Marco Paolo Bernardi

New Investigations on Rhythmic Oddity
Franck Jedrzejewski

Polytopic Graph of Latent Relations: A Multiscale Structure Model for Music Segments
Corentin Louboutin and Frédéric Bimbot

Machine Learning

Dynamic Time Warping for Automatic Musical Form Identification in Symbolical Music Files
Cristian Bañuelos and Felipe Orduña

Identification and Evolution of Musical Style I: Hierarchical Transition Networks and Their Modular Structure
Pablo Padilla, Francis Knights, Adrián Tonatiuh Ruiz, and Dan Tidhar

A Fuzzy-Clustering Based Approach for Measuring Similarity Between Melodies
Brian Martínez and Vicente Liern

The Evolution of Tango Harmony, 1910–1960
Bruno Mesz, Augusto Paladino, Juan Pérgola, and Pablo Amster

Determination of Compositional Systems Through Systemic Modeling
Liduino Pitombeira

A Cluster Analysis for Mode Identification in Early Music Genres
Daniel C. Tompkins
Cross Entropy as a Measure of Coherence and Uniqueness ........................ 324
Christopher Wm. White

Probability and Statistics in Musical Analysis and Composition

Complementary Collections in Ligeti’s Désordre. ................................. 337
Clifton Callender

Probabilistic Generation of Ragtime Music from Classical Melodies ........ 350
Joel Michelson, Hong Xu, and Phillip B. Kirlin

Using Probabilistic Parsers to Support Salsa Music Composition .......... 361
Brayan Rodríguez, Raúl Gutiérrez de Piñérez, and Gerardo M. Sarria M.

Author Index ......................................................................................... 373