Record Nr. UNINA9911015875403321 Autore Tsuji Kinko **Titolo** Physics and Mathematics in Musical Composition : A Comparative Study // by Kinko Tsuji, Stefan C. Müller Cham:,: Springer Nature Switzerland:,: Imprint: Springer,, 2025 Pubbl/distr/stampa **ISBN** 3-031-80732-4 Edizione [1st ed. 2025.] Descrizione fisica 1 online resource (300 pages) Altri autori (Persone) MüllerStefan C Disciplina 781.1 Soggetti Music - Mathematics Acoustics Music theory Mathematics in Music Theory of Music Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Part 1. How is Music Born? -- Chapter 1. Introduction -- Chapter 2. Nota di contenuto Intervals, Scales, Tuning and Harmonics -- Chapter 3. Acoustic Basis and Generation of Sound -- Chapter 4.Complexity and Dynamics in Phase Space -- Part 2. Journey across the World -- Chapter 5. Physical and Mathematical Aspects in European Music -- Chapter 6. Music in Other Cultures -- Part 3. Moving beyond -- Chapter 7. Why Do we Know that it is Mozart? -- Chapter 8.Ending without End. Sommario/riassunto How is music born? Is music made by humans or does it already exist and wait to be found? How do composers create (or nd) music? Having these questions in mind the authors ask more questions: How can we share our feelings with other people when listening to music? Can these be visualized? Why did Helmholtz have a problem with the third? Why is precise tuning so important in European music and less so in other cultures? What are the differences among the continents? What makes dissonant tone intervals uncomfortable in many cases? What enables us to distinguish the music of Mozart from that of Beethoven? Why are we fascinated by birdsong? Why does some music survive, whereas other

just disappears? And finally, along which lines will music develop in the future? Drawing upon physics and mathematics, the authors search for

answers to these questions and attempt to unravel in some depth the enigmas of how our minds are affected by the perception of music.