

Chew, Elaine and Yun-Ching Chen. "Determining Context-Defining Windows: Pitch Spelling using the Spiral Array" and "Mapping MIDI to the Spiral Array: Disambiguating Pitch Spellings."

The spiral array method is a unique mathematical model used to coordinate pitches, chords, keys and other tonal relations in order to approximate the key of a piece such that pitch spelling may be accomplished. It draws a similar essence from three- and four-dimensional graphical analysis of key finding algorithms such as Krumhansl's and others but makes an important distinction in having a sole purpose of pitch spelling and not necessarily key finding. As Cambouropoulos stated, it is not necessary to find the key of a piece to determine the correct spelling of the pitches, but the two are indirectly related. By using the spiral array to approximate the key, the exact information is not necessarily derived, but can be still be utilized in assisting in the finding the correct pitch spellings. This approximation is dubbed a Center of Effect (CE).

The accuracy of the CE approximation is determined by mathematical interpretations of Chew's and Chen's musical knowledge as well as other music theory information. The actual application of the spiral array is demonstrated in a Java program called MuSA in which real-time analysis can be visually examined through this algorithm. This is one of the most neatly packaged algorithms that we, as a class, have seen thus far. Due to the Java basis, there was a default case in the experimentations which utilized the Java Class MIDI-to-text converter. This paper was the only paper in which a declared "default case" was introduced and, in my personal opinion, brings light to the idea that a set "default case" should be utilized in all experimentations so that apples may be compared to apples and oranges to oranges.