

## TANITIM YAZISI: TRITONET A NEW APPROACH TO MUSIC HARMONY

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### **Abstract:**

Human ear can detect atmospheric pressure changes as sounds between 20 and 20000 Hz. Even though it is considered as a small range, we can still reach to infinite number of different frequencies by adding rational numbers into the calculation. Humanity had used the sound phenomenon not only for talking but also for music. In order to create a system, all the frequency range has been quantised and classified into 12 tones.

Besides the contemporary approaches, 12 tones are not used all together. Instead, a subgroup of notes are chosen out of twelve, which is labeled as scales. But how do we pick which ones to choose and in which order? Harmony, is a name of science who deals with the relationship between frequencies. It creates a dynamical system by analysing the concordance and hierarchy between tones.

Tritonet is a new concept in music theory. Based on circle of fifths, it allows to show the harmony in a schema and introduces a new window for understanding harmony in terms of tendencies and resistance. Tritonet, as a software, can help user to control the harmony of the music on the fly. Creating chord-chains and modulations with proper voice leading, system allows users to express their artistic integrity with an efficient way.

**Keywords:** Harmony, Circle of Fifths, Tritonet

### **Definition of Tritonet**

Tritonet is a new concept in music theory. Based on circle of fifths, it allows showing the harmony in a schema and introduces a new window for understanding harmony in terms of tendencies and resistance.

Music theory is a compulsory course for all music students. At the same time, amateur musicians may be keen to learn it in order to broaden their musical canvas. Western music theory is based on a compositional tradition developed in Europe throughout the centuries. Fundamental theory involves scales, melody writing, counterpoint and four part writing with voice leading and modulations.

Recent education system is derived from Jean-Philippe Rameau's 'Traité de l'harmonie réduite à ses principes naturels' book, written in 1722. Based on given functions in the tonality, this particular system is still the cornerstone of the music theory education system. Despite the updates to Rameau's approach over time, a number of difficulties are still encountered when using this system as an educational tool, such as:

- Due to complexity of the education system based on Rameau's approach, music theory lessons start at rather late age, around 13-14. Tritonet can reduce this number to six.
- Rameau's system relies heavily on repetition to be mastered, which leads to a longer educational process. Students complete the fundamental harmony education in four years, and then they are allowed to advance to the contemporary harmonic approaches.

- The system serves certain aesthetics of an era in the European history, namely 18th century European art music, which has been already stretched to the limits in the 19th century and has been abandoned mostly in the 20th century.
- The system takes the model of certain composers and sets the rules in order to mimic them. After learning it, it takes for educated students more time to get out of these sets of rules in order to find their own voice.
- Due to the complexity of the education, music theory is taught at full length only in certain institutions such as conservatories and music schools. This makes it difficult for non-school musicians to compete with the system.

### **Educational Tool**

Harmony, in a broader sense, is a science that deals with the relationship in between frequencies. Keeping the term in mind with this manner, music theory lessons can be expected to explain harmonicity and inharmonicity of the sounds, which is aesthetics-free. It should deal with the laws of physics and explore the duality in between tendency and resistance in sound motions.

The circle of fifths is one of the best and probably the oldest visual helper for identifying the relationship in between the sounds. Having twelve notes placed at a perfect fifth apart from each other, the circle of fifths looks like a watch or a zodiac map. Adding two new parts, anchor and the nightline, the schema gains symmetry and ensures the correct note-naming.

- With the help of Tritonet:
  - The education age goes lower due to the simplicity and visual help of the schema.
  - The harmonic analysis feature helps students see how other composers have used the harmony.
  - Students can use their knowledge in order to create an individual voice, right from the beginning.
  - More people can reach music harmony, as a simple educational system.
  - Fundamental theory can be completed in a shorter amount of time. The education can fit into one year, even two hours as a crash course.
  - Users can put their musical ideas into reality in a more efficient and quick way.

### **Performance Tool**

Besides being an educational system, Tritonet is also a musical instrument. Working with multiple harmonic approaches (triadic, quadral, maqam etc), and calculating proper voice leading, Tritonet is harmony controller, which creates and regulates 16 channel independent MIDI signals.

With Tritonet, you can:

- Control the music harmonically on the stage, change tonality and make modulations.
- Detect the tonality from singing or playing and create chordal structures accordingly.
- Compose live acoustic music on the stage by sending notation to musicians.

### **Scientific Tool**

Tritonet can be used as a harmony-meter besides hearing range. Same principles can be applied into different wave types due to fractal nature of harmonics.

