

# Approximate First Formant Locations

With Turning/Closing Pitches Below

A musical staff for Soprano voice. The treble clef is on the top line. The vowels i, e, ε, a, ɔ, o, and u are written in boxes on the top line. Below the staff, the first formant locations are indicated by pairs of dots with stems. The locations are: i (two dots on the first line), e (two dots on the first space), ε (two dots on the first space), a (two dots on the second line, with a flat sign below), ɔ (two dots on the second space), o (two dots on the second space, with a sharp sign below), and u (two dots on the second space, with a double sharp sign below).

Soprano

A musical staff for Mezzo Soprano voice. The treble clef is on the top line. The vowels i, e, ε, a, ɔ, o, and u are written in boxes on the top line. Below the staff, the first formant locations are indicated by pairs of dots with stems. The locations are: i (two dots on the first space), e (two dots on the first space), ε (two dots on the first space, with a flat sign below), a (two dots on the second line, with a sharp sign below), ɔ (two dots on the second space), o (two dots on the second space, with a flat sign below), and u (two dots on the second space).

Mezzo Soprano

A musical staff for Tenor voice. The treble clef is on the top line. The vowels i, e, ε, a, ɔ, o, and u are written in boxes on the top line. Below the staff, the first formant locations are indicated by pairs of dots with stems. The locations are: i (two dots on the first space), e (two dots on the first space), ε (two dots on the first space, with a flat sign below), a (two dots on the second line, with a sharp sign below), ɔ (two dots on the second space, with a flat sign below), o (two dots on the second space, with a flat sign below), and u (two dots on the second space).

Tenor

A musical staff for Baritone voice. The treble clef is on the top line. The vowels i, e, ε, a, ɔ, o, and u are written in boxes on the top line. Below the staff, the first formant locations are indicated by pairs of dots with stems. The locations are: i (two dots on the first space), e (two dots on the first space), ε (two dots on the first space, with a sharp sign below), a (two dots on the second line, with a sharp sign below), ɔ (two dots on the second space, with a flat sign below), o (two dots on the second space), and u (two dots on the second space, with a flat sign below).

Baritone

A musical staff for Bass voice. The treble clef is on the top line. The vowels i, e, ε, a, ɔ, o, and u are written in boxes on the top line. Below the staff, the first formant locations are indicated by pairs of dots with stems. The locations are: i (two dots on the first space), e (two dots on the first space), ε (two dots on the first space, with a flat sign below), a (two dots on the second line, with a flat sign below), ɔ (two dots on the second space, with a flat sign below), o (two dots on the second space, with a flat sign below), and u (two dots on the second space).

Bass

Bozeman, Kenneth, *Practical Vocal Acoustics: Pedagogic Applications for Teachers and Singers* (Hillsdale, NY: Pendragon Press, 2013)

Contact: [kenneth.w.bozeman@lawrence.edu](mailto:kenneth.w.bozeman@lawrence.edu) website: <http://faculty.lawrence.edu/bozemank/>