

Effect of Helium and Sulfur Hexafluoride Gas Inhalation on Voice Resonances

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Abstract : Voice is considered to be a unique biometric property of human beings. Unlike other biometric evidence, for example, fingerprints and retina scans, etc., voice can be easily changed or mimicked. The present paper talks about how the inhalation of helium and sulfur hexafluoride (SF₆) gas affects the voice formant frequencies that are the resonant frequencies of the vocal tract. Helium gas is low-density gas; hence, the voice travels with a higher speed than that of air. On the other side in SF₆ gas voice travels with lower speed than that of air due to its higher density. These results in decreasing the resonant frequencies of voice in helium and increasing in SF₆. Results are presented with the help of Praat software, which is used for voice analysis.

Keywords : voice formants, helium, sulfur hexafluoride, gas inhalation

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