

Analysis Of Acoustic of “OM” Chant To Study It’s Effect on Nervous System

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Summary

OM does not have a translation. Therefore, the Hindus consider it as the very name of the Absolute, it is body of sound. In the scriptures of ancient India, the OM is considered as the most powerful of all the mantras. The others are considered aspects of the OM, and the OM is the matrix of all other mantras. It has been recognized that the Mantras have beneficial effects on human beings and even plants. The syllable OM is quite familiar to a Hindu. It occurs in every prayer. Invocation to most gods begins with this syllable. OM is also pronounced as AUM. The syllable OM is not specific to Indian culture. It has religious significance in other religions also. Although OM is not given any specific definition and is considered to be a cosmic sound, a primordial sound, the totality of all sounds etc. The entire psychological pressure and worldly thoughts are removed by chanting OM Mantra .To systematically understand the sound ‘OM’ and its effect on nervous system is the endeavor of this research work. With proposed algorithm analysis has been carried out for the divine sound OM. By this analysis we could conclude OM is therefore serves as a brain stabilizer, which is also an energy medicine for human being under stress.

Key words:

OM Mantra, Pitch, Frequency Modulation, Nervous system, Energy Medicine

1. Introduction

OM Mantra itself is not a mere human invention, going long with particular cultures or groups. Rather, the OM Mantra (or AUM Mantra) is a symbol of deep realities that already exist. The levels of gross (A), subtle (U), and causal (M), and the states of waking (A), dreaming (U), and deep sleep (M) are definitely there, regardless of the symbolism captured in the mantra when stated as AUM Mantra [1][2]. It is these realities that are most useful in our spiritual practices. If the OM mantra is repeated just for the feeling, having no sense of meaning at all, the experience can be quite pleasant, calming, and balancing [2]. However, if one has a sense of the deeper meanings of the mantra, and different methods of using it, then the experience can be even richer and more revealing as one progress in yoga meditation. By experimenting with the various methods, one of them may emerge that feels most

personally in tune. The use of this mantra can be profound. At first, it is best to use the mantra gently and for short periods of time. The insights from the OM mantra can be significant, and it is good to integrate the insights gradually with daily life.

2. Om Mantra and Methods of Practice

It is proposed by Swami Jnaneshvara Bharti that there are many rhythms in the body and mind, both gross and subtle. The sound of OM, rising and falling, at whatever speed is comfortable and natural. It may be very fast, several cycles per second. Or it may be slower, several seconds for each cycling of OM Mantra. Or it might become extremely slow; with the mmmmm... sound continuing in the mind for much longer periods, but still pulsing at that slow rate. It is somewhat like one of these vibrations:

OMmmOMmmOMmm...
OMmmmmOMmmmmOMmmmm...
OMmmmmmmmmOMmmmmmmmmOMmm
m.

This kind of awareness of the OM mantra can be used both at meditation time and during daily life. The OM mantra is allowed to be somewhat of a constant companion. It brings a centering, balancing quality to daily life. This doe’s not mean being in a dull, lethargic state. Rather, done well, it brings clarity of mind and a greater ability to be in the world, and selflessly serving others. This is not intended as a blocking mechanism to prevent dealing with one’s thought process or with the challenges of life. It is not a method of escapism. However, it definitely can have the effect of bringing focus to the mind, which can break a pattern of disturbing or distracting thoughts coming from the noisy or chattering mind. In this way, one has a greater openness to being aware of positive thoughts and spiritual realities that are always there, different methods are proposed to practice OM mantra [3].

One method: Imagine the sound of OM Mantra internally, in the mind only, making no external sound. Allow the mantra to flow with the breath. Repeat like this:

Exhale: "OMmmmmmmmm..."
 Inhale: "OMmmmmmmmm..."
 Exhale: "OMmmmmmmmm..."
 Inhale: "OMmmmmmmmm..."
 Exhale: "OMmmmmmmmm..."
 Inhale: "OMmmmmmmmm..."

Another method: Alternatively, imagine the OM mantra only on exhalation, if that feels more comfortable:

Exhale: "OMmmmmmmmm..."
 Inhale: " (silence) "
 Exhale: "OMmmmmmmmm..."
 Inhale: " (silence) "

In this practice, you come to experience the mind, breath, and mantra flowing in unison. This synchronization has a beautiful effect on meditation. Simply allow the OM Mantra to come and go with each inhalation and exhalation. Allow there to be no gap, no space, no pause between inhalation and exhalation, or between exhalation and inhalation. When the word OM is heard, what is the concept and object that comes to mind? What is that thing that goes along with that word, OM? The concept that goes with OM is the one-ness or entirety of the universe. The object that goes with the word OM is the entire universe, as a single unit, including the gross, subtle, causal planes of reality, both manifest and unmanifest. It means that whole, as if it was one, single object. It is that infinitely huge object, which is the object that goes with the word OM. There is a feeling of stretching, as if the attention had to get bigger and bigger, to contain the whole, the same way as the chair has a back, a seat, and legs, yet is collectively a chair. Continue to repeat OM, and continue to expand, so as to allow your attention to contain the whole of the object called OM. In other words we can say that it becomes imbued within the consciousness of the person listening or sounding it i.e chanting meditation [4].

3. Chanting Meditation

It means keeping a not-moving mind and perceiving the sound of your own OM. Perceiving your voice means perceiving your true self or nature. Then you and the sound are never separate, which means that you and the whole universe are never separate. Thus, to perceive our true nature is to perceive universal substance. With regular chanting, our sense of being centered gets

stronger and stronger. However, when we do chanting meditation correctly, perceiving the sound of our own voice and the voices all around the sound of the voice. Ultimately, we learn that chanting meditation is not for our personal pleasure, to give us good feeling, but to make our direction clear. Our direction is to become clear and enlightened, in order to save all beings from suffering... What's important is to perceive the sound and become one with it, without making "I" and "sound." At the moment of true perceiving, there is no thought, no separation, only perceiving sound. This is the crucial point. So during chanting time, perceive your own voice and the voice of others, just perceive this bell or drum sound, and cut off all thinking. Then your wisdom will grow, you will get enlightenment, and thus save all beings.

4. Database

Recordings of OM chanting served as a database of this experiment. The recordings were made in a quiet room at 44.1 kHz sampling rate using a close-talk microphone. All files were segmented manually. Male and female speakers of age group 30 to 40 years did the entire recording in evening time after a days work before dinner by sitting in a padmasana position, which is best position for meditation. Recording is done for about 10 minutes.

5. Technique and Concept used

This section gives a brief introduction of the concepts and techniques utilized. The proposed algorithm is

- 1) Recording of the OM chant using a close-talk sensitive microphone in the windows '.wav' format.
- 2) Digitizing the analog waveforms with the help of a MATLAB using a sampling rate of 44.1 KHz.
- 3) Start & end point detection to resize wave file
- 4) Segmentation of complete chant into OM samples.
- 5) Dividing each OM sample into overlapping frames to determine average pitch (f_0).
- 6) Frequency modulation with maximum frequency deviation $2f_0$.

The configuration of the computer used for analysis was a Pentium IV 2.66 GHz with 512 MB RAM running on Microsoft Windows XP Media Center Edition Version 2002 with Service Pack 2. The software used for analysis was MATLAB 7.0.0 (R14b).

Since the professional studio recording was a stereo recording, it was recorded as 44.1 KHz 16 bit stereo audio file for duration spells of ten minutes each. In the stereo recordings, the first Channel data was obtained using MATLAB software and used for further analysis. In this Research work, the ten-minute recording has been scientifically analyzed.

6. Analysis Results

Waveforms of Frequency modulation by OM chant are presented below

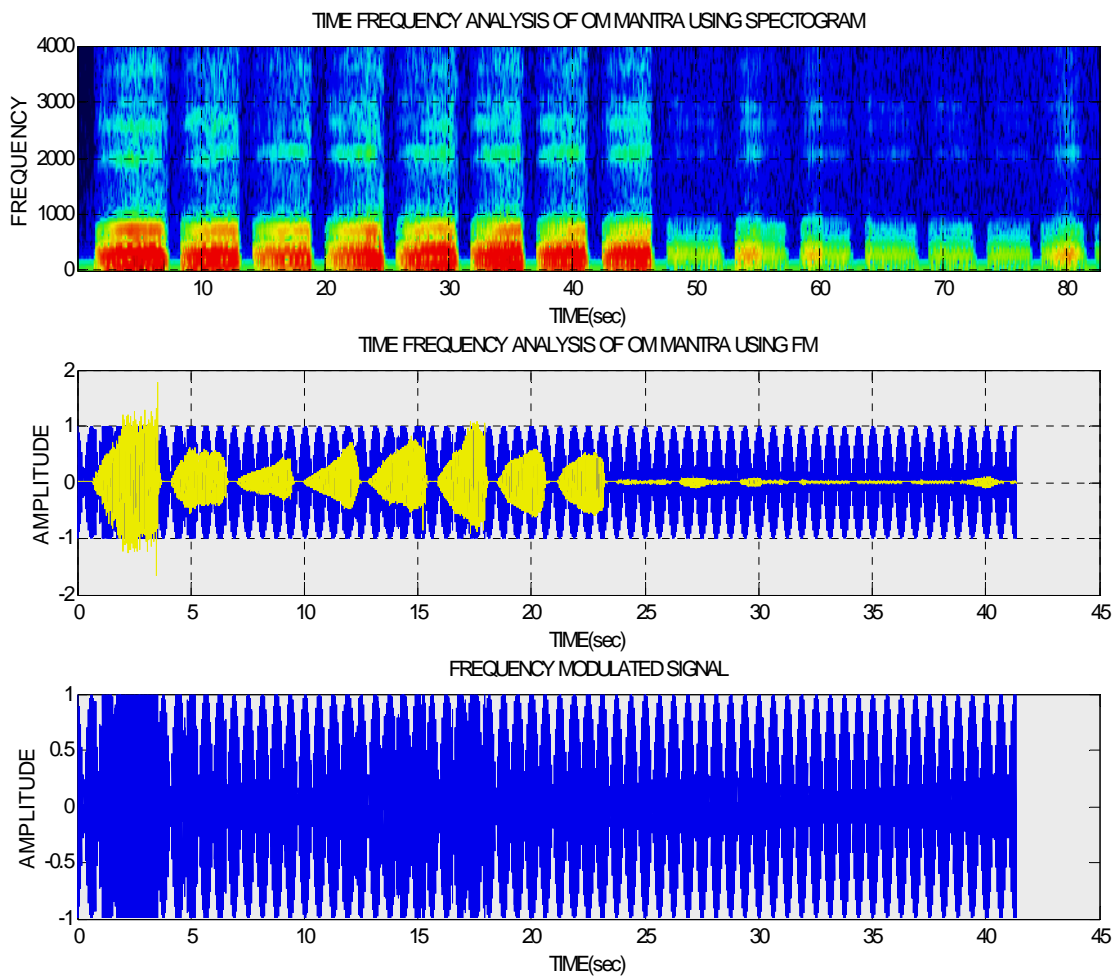


Fig. 1 Depicts the chanting of “OM” by a male speaker and frequency modulated waveform.

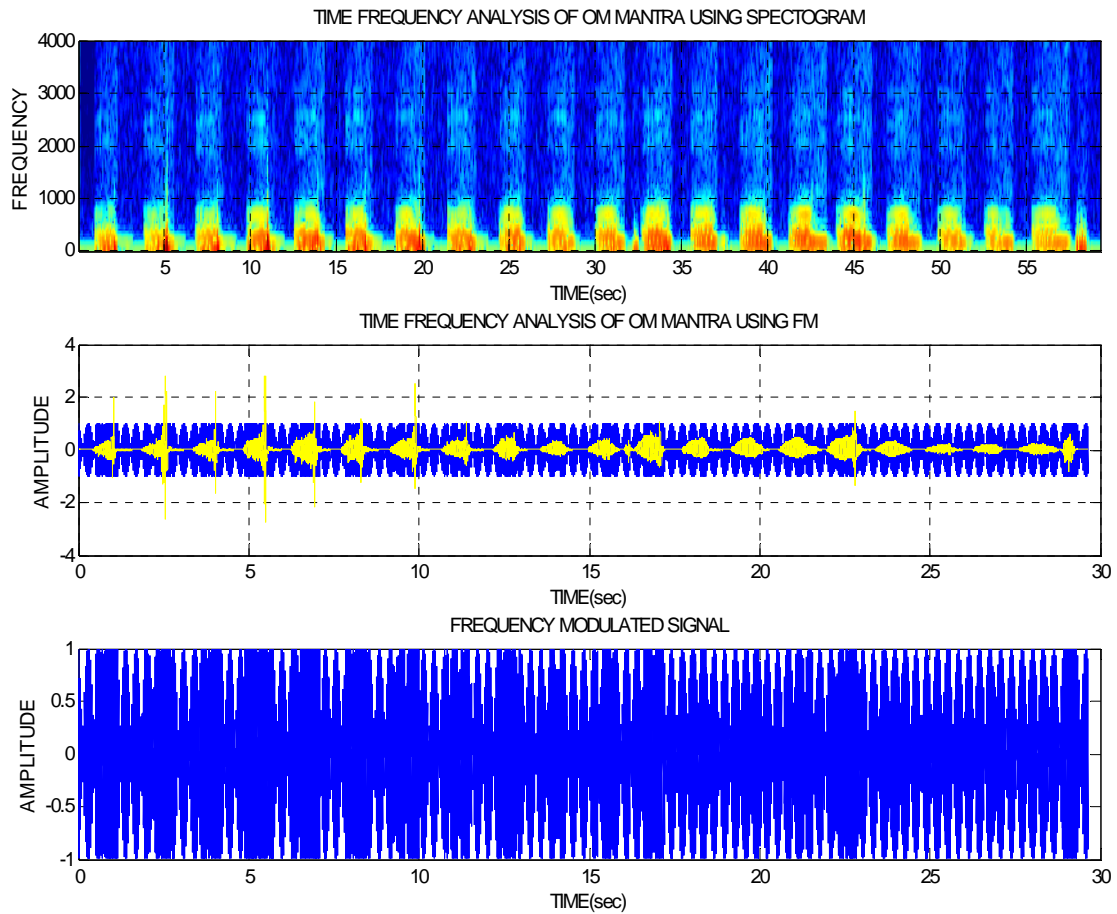


Fig. 2 Depicts the chanting of “OM” by a female speaker and frequency modulated waveform.

7. Conclusion

From above observation it is clear that in the initial part of FM signal carrier swing is more which is due to initial OM chanting. As we go on chanting OM mantra, the mind becomes calm. When the mind becomes calm, the body relaxes, and the breath becomes even soother and slower. That rate of speed at which the OM mantra is being repeated naturally slows down. It is not a matter of forcing the mantra to slow, but rather, this slowing comes quite naturally. Allow the mind to stay wide-awake and alert, as the OM mantra and breath become naturally slower and slower. Within minutes your mind and body begin to relax, negative thoughts are dramatically swept away to releasing this internal life force that heals the self on a cellular level, with more energy, strength and focus. The electrical activity presents throughout the body and is a by-product of the activity within every living cell

changes. It is all due to biofeedback. This effect is shown graphically by final part of OM chant, for this carrier swing is less and uniform.

From this we could conclude that chanting OM mantra results in stabilization of brain, removal of worldly thoughts and increase of energy. It means that concentrating on OM mantra and continuously doing it slowly shifts our attention. It is reflection of the most fundamental interlocking processes in our bodies...the harmony we play echoes the harmonic relationships of every vital system i.e. our heartbeat, our breathing, our brainwaves pulsing, our neuronal firing, our cells throbbing, our metabolic, enzymatic, and hormonal rhythms and our behaviors in our addictions and our habits. In this sense OM mantra is a brain stabilizer, by practicing it one can enter deeper and deeper into the own natural state, which is also an energy medicine for human being under stress.

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