

An Endeavor to Illustrate an Objective Evidence for the Action of Homeopathic Medicines by Measuring Physiological Variability in Human Body Temperature

Dr.Devendra Kumar Munta, MD (Homeo)

Abstract: Homeopathic medicines of 200c potency are applied orally to human subjects. 'Physiological variability in temperature' from skin of forearm is measured with the help of temperature data logger and water/soil temperature sensor. Temperature readings are taken at an interval of 1 second for 5 minutes. Time series spectral analysis is performed by using Statistical processing software. The statistical procedures like Auto Regressive Spectrum (ARS) and Parametric prediction and reconstruction (PPR) are used to study the change in temperature variability. There is marked change in temperature variability before and after applied homeopathic medicine.

Key words: Homeopathic medicine, Physiological variability in temperature, temperature data logger, water/soil sensor, AR Spectrum, Parametric Reconstruction and prediction

Aims and objectives:

Primary:

1. To show an objective evidence for the action of Homeopathic medicine by measuring physiological variability in human body temperature.

Secondary:

1. To draw signature for individual Homeopathic medicines.
2. To find out a unified method to select homeopathic medicine for diseased individuals.
3. To introduce objective measures into Homeopathic system of medicine like data loggers and sensors to measure physiological variability for selection of Homeopathic medicine.

Introduction and review:

Homeopathy is a well-described, scientifically based system of approaching health and disease. "Scientific" because the insights are based on reproducible experiments. "Well-described" because from these observations a number of precise basic fundamental rules became evident, first among them the "similarity principle."¹² But lack of objective evidence for the action of Homeopathic medicine bestow an opportunity for skeptics to comment ridiculously.

Although homeopathy is only 200 years old, it is now practiced in a variety of ways, most of which bear little resemblance to what Hahnemann taught. In the public mind the word "homeopathy" has become so vague that for some it means only an "alternative medicine" and for others a combination of homeopathic medicines that you buy in the health food store, one mixture for allergies, another for headache, etc¹². There by it needs unified method to select similar homeopathic medicine for patients disturbed energy field.

Our earth by virtue of a hidden invisible energy, carries the moon around her in twenty eight days and several hours, and the moon alternately, in definite fixed hours (deducting certain differences which occur with the full and new moon) raises our northern seas to flood tide and again correspondingly lowers them to ebb.³

According to the homeopathic way of thinking, a disease originates from a disturbance of the patient's "vital force." This is the life force energy that sustains life. As the origin of disease occurs on this energetic level, the homeopathic remedy has also to be on this level.¹² Current study provides an objective evidence for the action of homeopathic medicine and also deals with identification of similar homeopathic medicine for the patients disturbed life force by means of objective measures "Data loggers and Sensors".

This study facilitates in drawing signatures for individual Homeopathic medicines. This study also gives you an idea about approach, to develop a common method to select accurate Homeopathic medicine for diseased individual.

In order to recognize the behavior of homeopathic medicines, which are applied orally, it is attempted to study the natural regulatory mechanisms in Human body as well as the nature.

In this regard Biorhythms "occurrence of cyclical biological events" have supported to this hypothesis that "Homeopathic medicines produce cyclical change in human body". Extension of this initiative, guide to study the function of Hypothalamus "the seat of biorhythms".

The hypothalamus is responsible for certain metabolic processes and other activities of the Autonomic Nervous System. It synthesizes and secretes neurohormones, often called hypothalamic-releasing hormones, and these in turn stimulate or inhibit the secretion of pituitary hormones. The hypothalamus controls *body temperature, hunger, thirst, fatigue, and circadian cycles*.⁹

The tiny dose of **Homoeopathic Medicines** to some extent move up the thermoregulatory set point located in Hypothalamus of living being naturally required for the rise in body temperature in order to deactivate the microbes (Disease Forces).¹³

The effects of tiny dose of Homoeopathic Medicines simulates the Biologic Activities of Pyrogenic Cytokines like IL-1, TNFa, AND IL-6 and INFs. The potentised dose of similar Homeopathic Medicines (just like PGE2) is the most potent of the fever-producing means without inflicting any injurious effect to the sick living being when prescribed on symptom similarity and in infinitesimal low doses.¹³

So one of the regulatory function of Hypothalamus 'Thermoregulation in human subjects' is taken as primary subject to understand the action of Homeopathic medicine. The parameter "**Physiological variability in human body temperature**" (Vital Heat) is selected for the study.

The history of study of variations in the physiological parameters folds back to 18th century when Stephen Hales documented beat to beat variability. They related spontaneous fluctuations in the peripheral blood flow to adjustment in the continuous circulation by the thermoregulatory system.²

Thermoregulation is the ability of an organism to keep its body temperature within certain boundaries, even when the surrounding temperature is very different. This process is one aspect of homeostasis: a dynamic state of stability between an animal's internal environment and its *external* environment.¹⁰

The organism that *thermoregulates* is one that keeps its core body temperature within certain limits. It was not until the introduction of thermometers that any exact data on the temperature of animals could be obtained. It was then found that local differences were present, since heat production and heat loss vary considerably in different parts of the body, although the circulation

of the blood tends to bring about a mean temperature of the internal parts. Hence it is important to identify the parts of the body that most closely reflect the temperature of the internal organs. Also, for such results to be comparable, the measurements must be conducted under comparable conditions. The rectum has traditionally been considered to reflect most accurately the temperature of internal parts, or in some cases of sex or species, the vagina, uterus or bladder. Occasionally the temperature of the urine as it leaves the urethra may be of use. More usually the temperature is taken in the mouth, axilla, ear or groin.¹⁰

The body owns a regulatory system that keeps body temperature within a close range. The centers of this system are located in the hypothalamus. Temperature sensors are found in the preoptic and anterior hypothalamic nuclei. *More sensors are contained in the skin* and in a few deep tissues in the body. The temperature is regulated by a nervous feedback mechanism. The signals from the sensors are evaluated in the posterior hypothalamus.⁵

In this study temperature is measured from skin of forearm, as this study doesn't required exact values, the variability in temperature is measured from skin. "It is supposed that Homeopathic medicines produce change in temperature variability".

Materials and methods:

1. Equipment:

- A. Temperature Data logger,
- B. Water/Soil Temperature Sensors ,
- C. PC & Green line data logging software.
- D. Human Subjects.
- E. Homeopathic Medicines of 200c Dilution.
- F. Statistical Processing Software for Data Analysis.

2. Temperature Datalogger Specifications:

- i. Measurement range: -4° to 158° F
- ii. Accuracy: + or $- 0.63^{\circ}$ F (from 32° to 122° F)
- iii. Resolution : 0.05° F at 77° F
- iv. Response time in airflow of 1 m/s : 6 minutes
- v. Operating temperature: -4° to 158° F(logging), 32° to 122° F(Launching/Readout)
- vi. Memory: 64 bytes
- vii. Weight: 46g(1.6 oz)

3. Water/Soil Temperature Sensor Specifications:

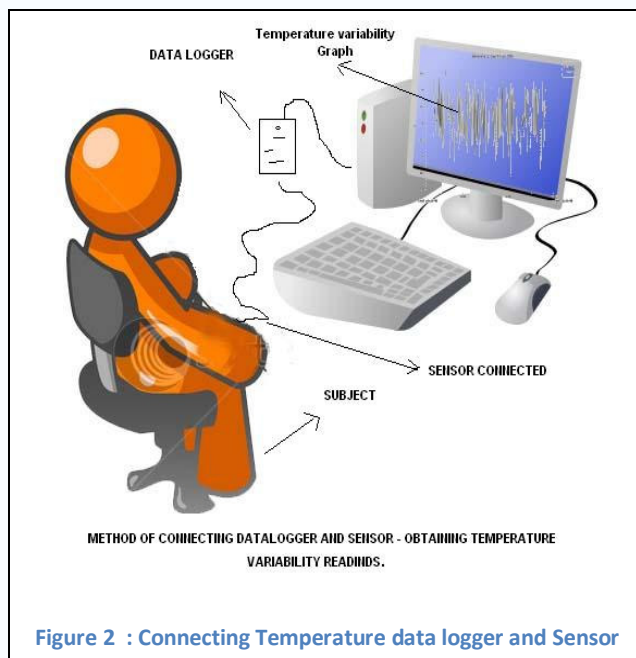
- i. Measurement range: -40° to 122° F in water, -40° to 212° F in air.
- ii. Accuracy: + or $- 0.45^{\circ}$ F
- iii. Resolution: 0.05° F at 68° F
- iv. Response time in airflow of 1 m/s: 3 minutes, 30 seconds in water.
- v. Operating range: sensor tip and cable immersion in fresh water up to $+122^{\circ}$ F.
- vi. Material: Housing stainless steel sensor tip.
- vii. Probe dimensions: 0.5cm X 2.5cm



4. Methodology:

Experiment was conducted with Human subjects. Freshly medicated 6-9 Homeopathic pills were applied orally half an hour prior to acquired temperature readings. Temperature readings were obtained from skin of forearm of subjects. Water soil sensor was connected to skin by means of cellophane tape. Readings were taken in sitting posture. Subjects were instructed not to move while obtaining readings. Method of connecting data logger and sensor was shown in Fig 2.

Temperature readings were taken at an interval of 1 second for 5 minutes. Each data file of a subject contains 300 readings. After obtained readings, data can be exported to excel file. Each data file contains 300 temperature reading points i.e. *Temperature variability data*.



5. Protocol:

Two types of protocols are followed in these experiments.

5.1. With Placebo control: Subjects are divided into medicine group and placebo group. Applied homeopathic medicine to one group and placebo to another group. Eg: Exp No:1, Exp No:2, Exp no:6 & Exp no:7.

5.2. Without Placebo control: Subjects are not divided into groups. Reading are taken from the same subjects before and after applied homeopathic medicine. Eg: Exp No 3, Exp No:4, Exp no:5, Exp no:8 & Exp No:9.

6. Statistical Analysis:

The temperature variability data is processed with statistical processing software. The statistical procedures *Auto regressive spectrum* (AR Spectrum) and *Parametric Reconstruction and Prediction* (PRP) are used for the data analysis. With these procedures the time series data can be converted into frequency domain data.

In statistical signal processing and physics, the **spectral density**, **power spectral density (PSD)**, or **energy spectral density (ESD)**, is a positive real function of a frequency variable associated with a stationary stochastic process, or a deterministic function of time, which has dimensions of power per Hz, or energy per Hz. It is often called simply the *spectrum* of the signal. Intuitively, the spectral density captures the frequency content of a stochastic process and helps identify periodicities.¹⁴

In physics, the signal is usually a wave, such as an electromagnetic wave, random vibration, or an acoustic wave. The spectral density of the wave, when multiplied by an appropriate factor, will give the power carried by the wave, per unit frequency, known as the **power spectral density (PSD)** of the signal. Power spectral density is commonly expressed in watts per hertz (W/Hz) or dBm/Hz.¹⁴

For voltage signals, it is customary to use units of $V^2\text{Hz}^{-1}$ for PSD, and $V^2\text{sHz}^{-1}$ for ESD or $\text{dB}\mu\text{V/Hz}$.¹⁴

For random vibration analysis, units of g^2Hz^{-1} are sometimes used for acceleration spectral density.¹⁴

6.1 Autoregressive model:

Definition:

The notation $\text{AR}(p)$ refers to the autoregressive model of order p . The $\text{AR}(p)$ model is defined as

$$X_t = c + \sum_{i=1}^p \varphi_i X_{t-i} + \varepsilon_t$$

where $\varphi_1, \dots, \varphi_p$ are the **parameters** of the model, c is a constant and ε_t is white noise. The constant term is omitted by many authors for simplicity.

An autoregressive model can thus be viewed as the output of an all-pole infinite impulse response filter whose input is white noise.

Some constraints are necessary on the values of the parameters of this model in order that the model remains wide-sense stationary.⁸ For example, processes in the AR(1) model with $|\varphi_1| \geq 1$ are not stationary. More generally, for an AR(p) model to be wide-sense stationary, the roots of the polynomial $z^p - \sum_{i=1}^p \varphi_i z^{p-i}$ must lie within the unit circle, i.e., each root z_i must satisfy $|z_i| < 1$.

6.2 Parametric Interpolation and Prediction:

The Parametric Interpolation and Prediction is a powerful composite algorithm that generates a parametric (sinusoids or damped sinusoids) model of the signal. The algorithm has three stages. In the first stage, an AR, Prony, Eigenanalysis, or Fourier procedure is used to estimate the frequencies and component count. In the second stage a linear fit is made to determine the amplitudes and phases. These are the starting estimates for the third stage, the non-linear optimization. This option combines all of the steps into a single integrated procedure for interpolation and prediction.

6.2.1 Non-Linear Optimization Plot:

The following is the non-linear optimization graph for data consisting of three sinusoids and noise. The three component functions are shown in the Y-axis plot. The Y2 plot contains the fitted curve and the data that were fitted.

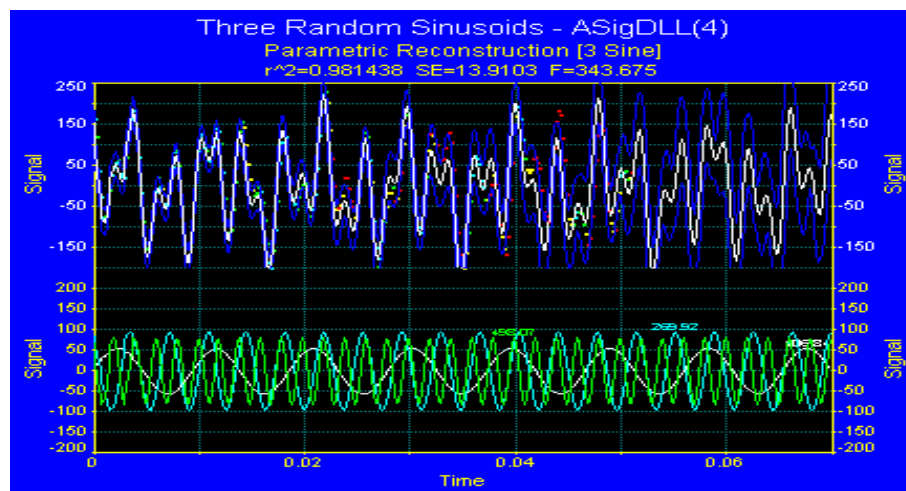


Figure 3: Example graph of parametric prediction.

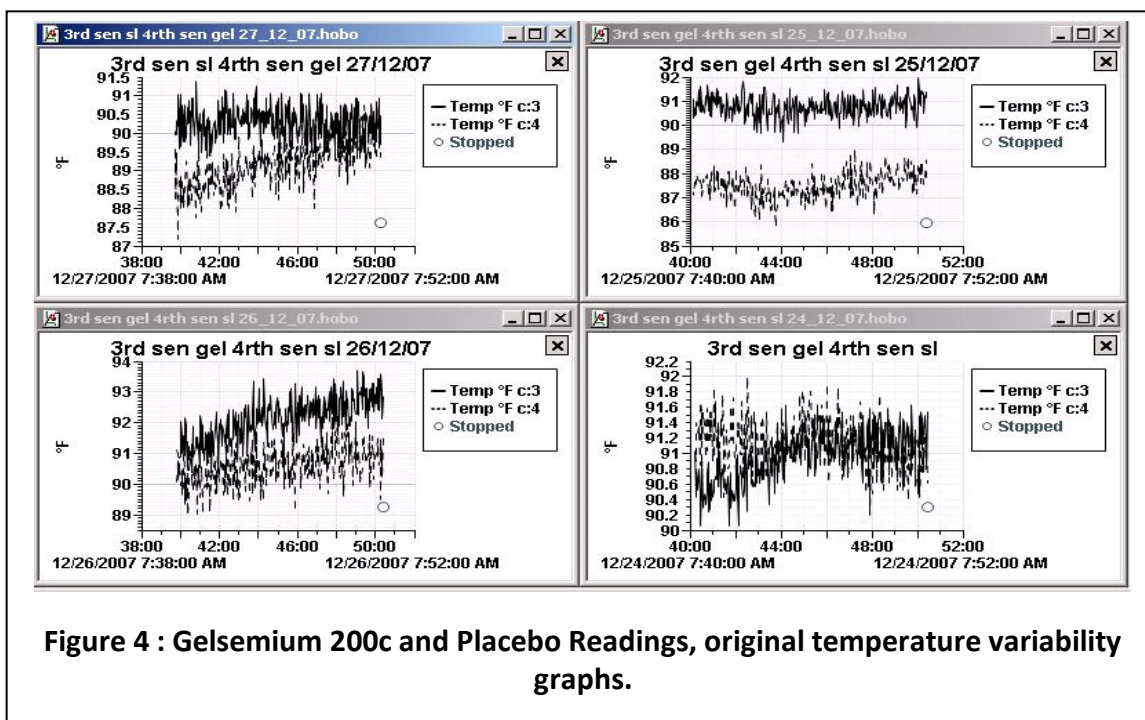
Results:

The following are results of the experiments conducted with various Homeopathic medicines.

A) EXP No: 1

Experiment with Gelsemium 200c:

In case of experiment with Gelsemium, there were 8 subjects, 4 days, two per a day, This experiment was conducted with 2 sensors.



In the following figure:5 there are two columns left side are Gelsemium 200c subjects, right are Placebo subjects. Placebo control is used in this experiment.

Day 1:

Sensor 1 - subject 1 - Gelsemium 200 - time 07.40.14 am - 08.00.00am

Sensor 2 - subject 2 - placebo - time 07.40.14 am - 08.00.00am

Day 2:

Sensor 1 - subject 3 - Gelsemium 200 - time 07.40.14 am - 08.00.00am

Sensor 2 - subject 4 - placebo - time 07.40.14 am - 08.00.00am

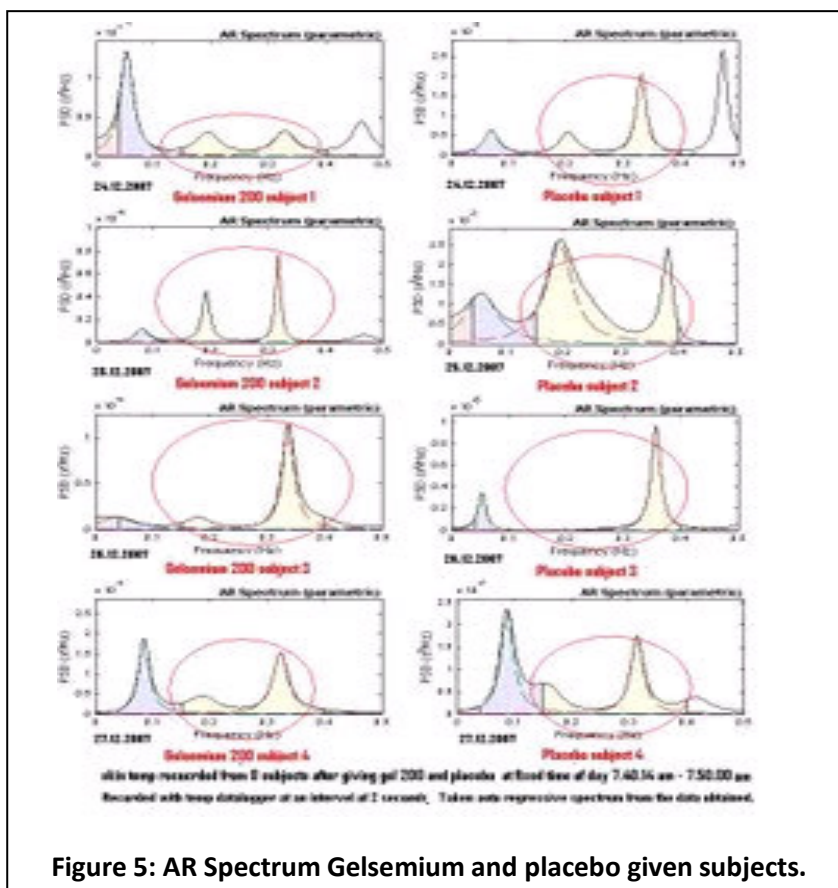


Figure 5: AR Spectrum Gelsemium and placebo given subjects.

Day 3:

Sensor 2 - subject 5 - Gelsemium 200 - time 07.40.14 am - 08.00.00am

Sensor 1 - subject 6 - placebo - time 07.40.14 am - 08.00.00am

Day 4:

Sensor 2 - subject 7 - Gelsemium 200 - time 07.40.14 am - 08.00.00am

Sensor 1 - subject 8 - placebo - time 07.40.14 am - 08.00.00am

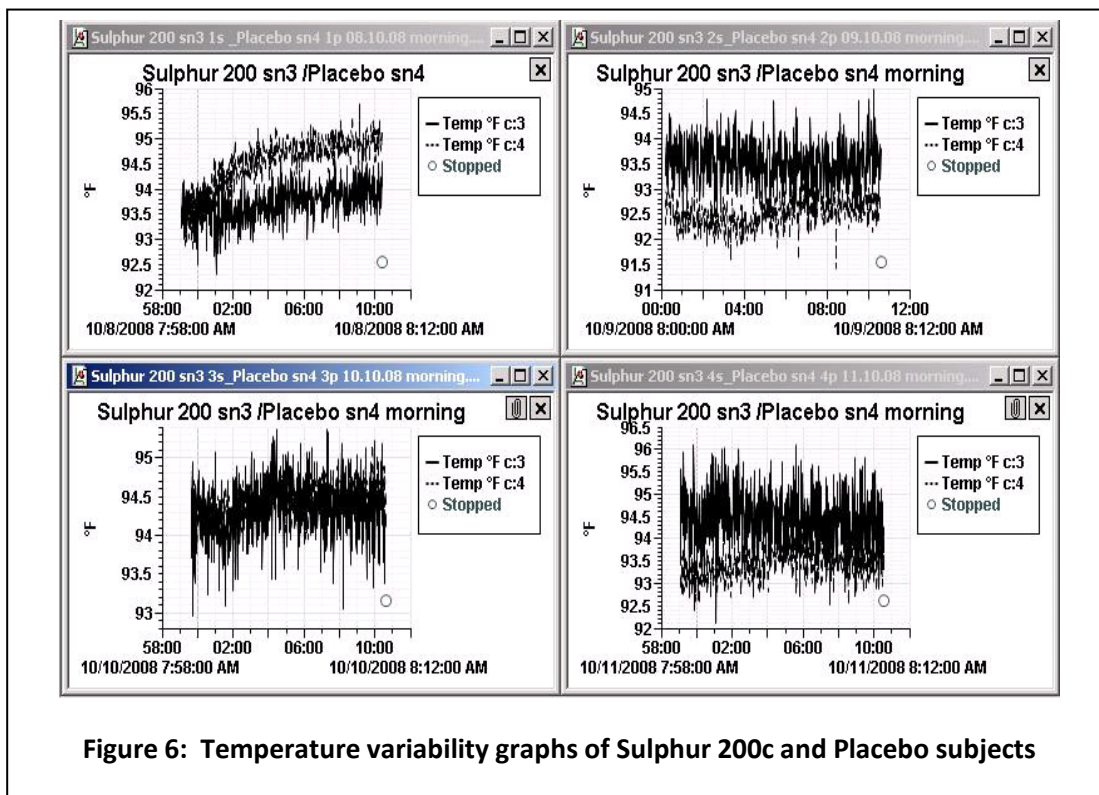
In this Experiment, recorded skin temperature from skin of forearm for 10 minutes at an interval of 2 seconds.

In case of Gelsemium subjects – observe, peaks in medium frequency are at the same frequency level. But amplitude is different in case of sensor 2 Gelsemium subjects (first column last two graphs).

B) EXP No:2

Experiment with Sulphur 200c:

In case of experiment with Sulphur 200c, there are 6 subjects, 4 days and two per a day. In this experiment also used 2 sensors.



1st day:

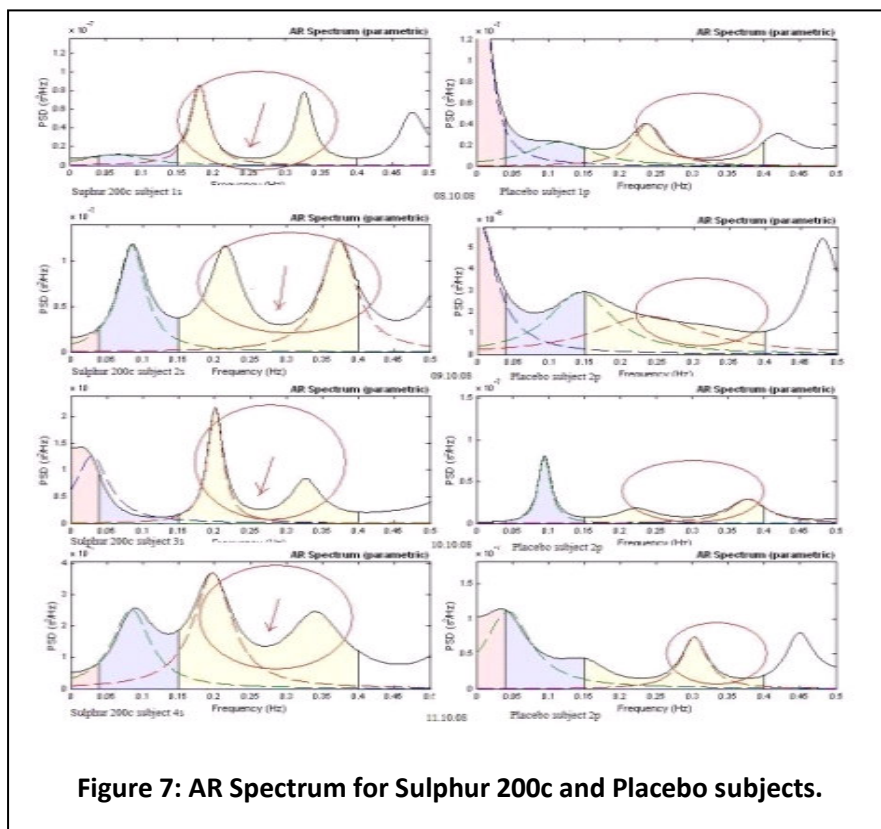
sensor 1 - subject 1 - Sulphur 200 - time 8.00.00am – 8.10.00am

sensor 2 - subject 2 - placebo - time 8.00.00am – 8.10.00am

2nd day:

Sensor 1 - subject 3 - Sulphur 200 - time 8.00.00am – 8.10.00am

sensor 2 - subject 4 - placebo - time 8.00.00am – 8.10.00am



day 3:

Sensor 1 - subject 5 - Sulphur 200 - time 8.00.00am – 8.10.00am

Sensor 2 - subject 2 - placebo - time 8.00.00am – 8.10.00am

Day 4:

Sensor 1 - subject 6 -Sulphur 200 - time 8.00.00am – 8.10.00am

Sensor 2 - subject 2 - placebo - time 8.00.00am – 8.10.00am

In this experiment recorded skin temperature from forearm for 10 minutes at an interval of 1 second.

Figure:7 showing 2 columns of graphs. Left side column is Sulphur given subjects. Right side is of placebo given subjects. The medium frequency(marked) shows peaks at same frequency level, amplitude also not varying much.

In case of experiment with Gelsemium, placebo subjects applied alcohol mixed sugar pills.

In case of experiment with Sulphur, placebo subjects applied just sugar pills.

Note: alcohol also produces peaks in medium frequency but not at a fixed frequency level as medicine produced. Observe the above graphs. (Fig:5, Fig:7)

Parametric reconstruction and prediction graph for the above Sulphur 4 subjects: This graph shows 2 persons (Subject2, Subject 4) responded well to Sulphur 200c.

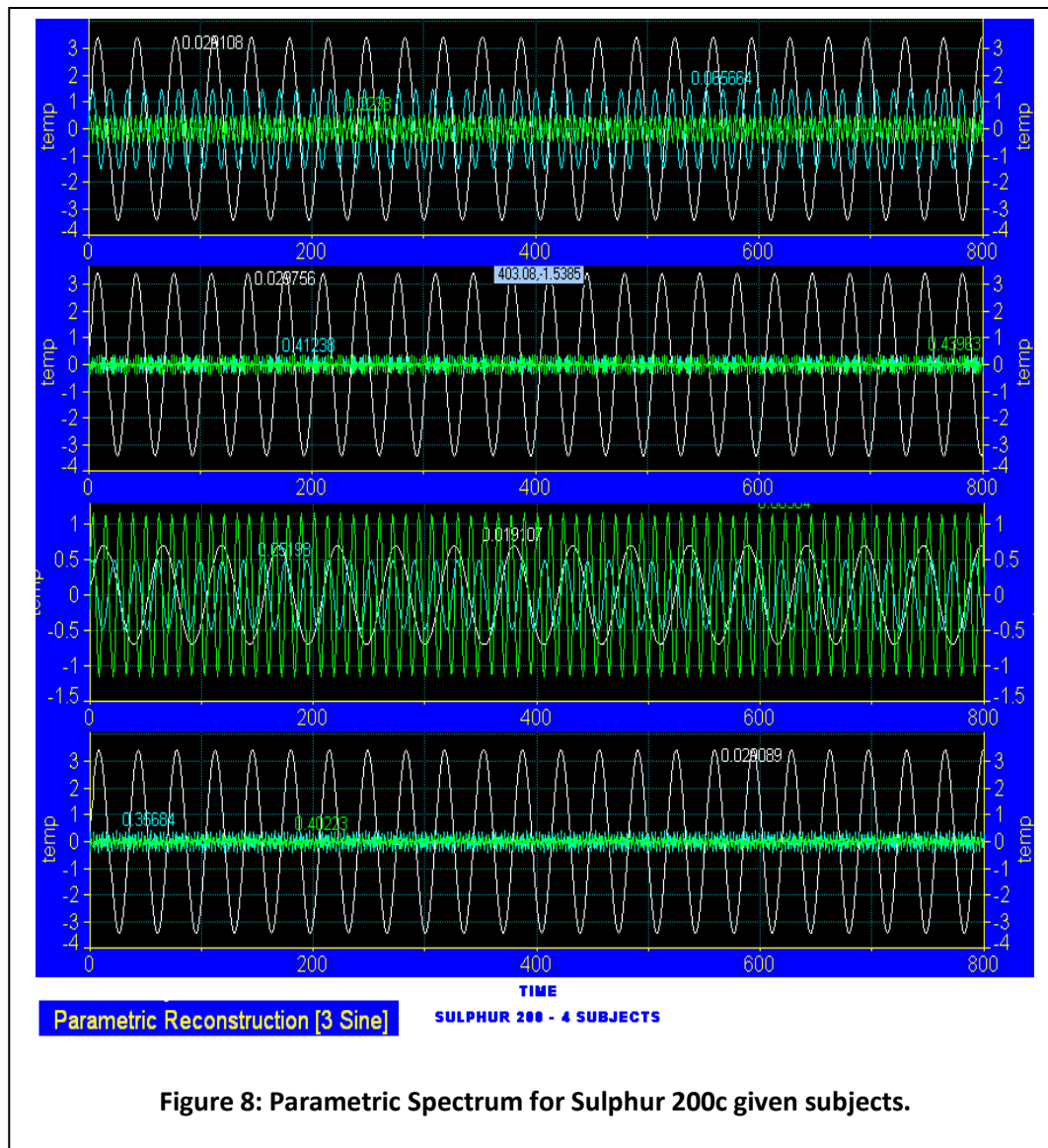


Figure 8: Parametric Spectrum for Sulphur 200c given subjects.

C) EXP No: 3

Experiments with china 200c:

This experiment includes 5 subjects, parametric reconstruction graphs for these 3 subjects before and after applied china 200c are presented here:

Subject 1: Smoothness and regular pattern in parametric y2 plot after applied homeopathic medicine represents the remedy action.

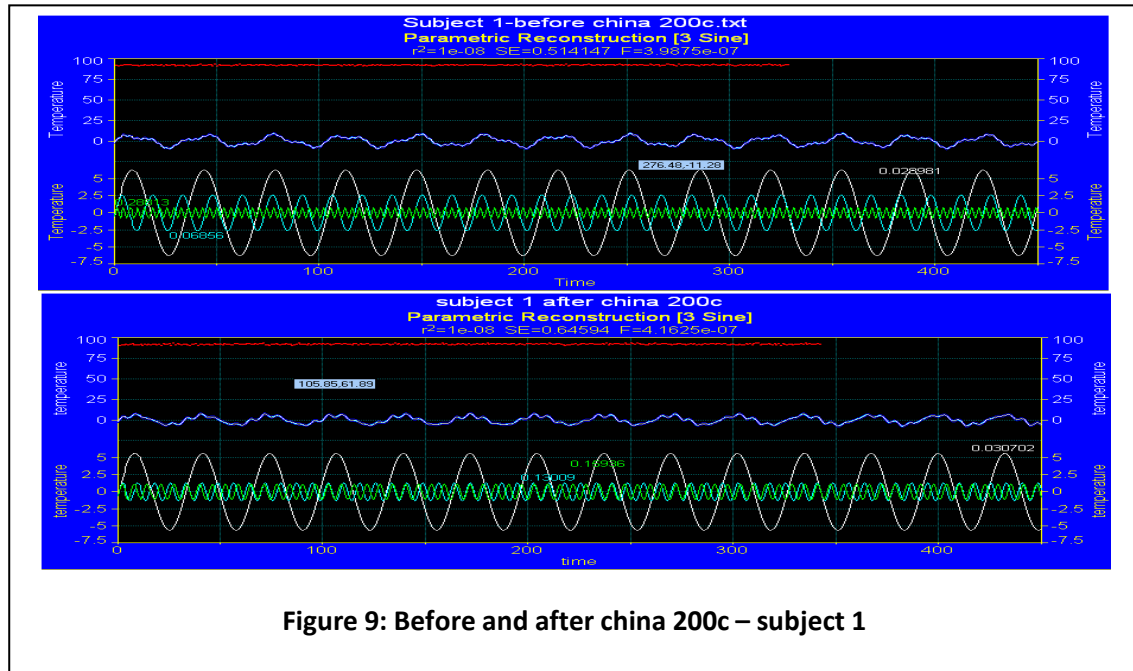


Figure 9: Before and after china 200c – subject 1

Subject 2: Before and after applied china 200c.

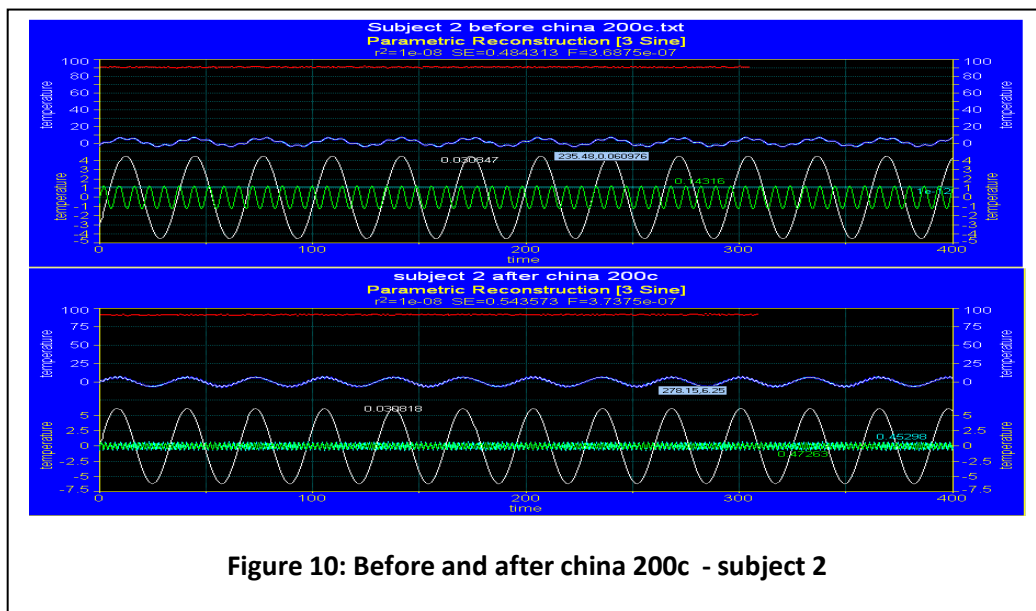
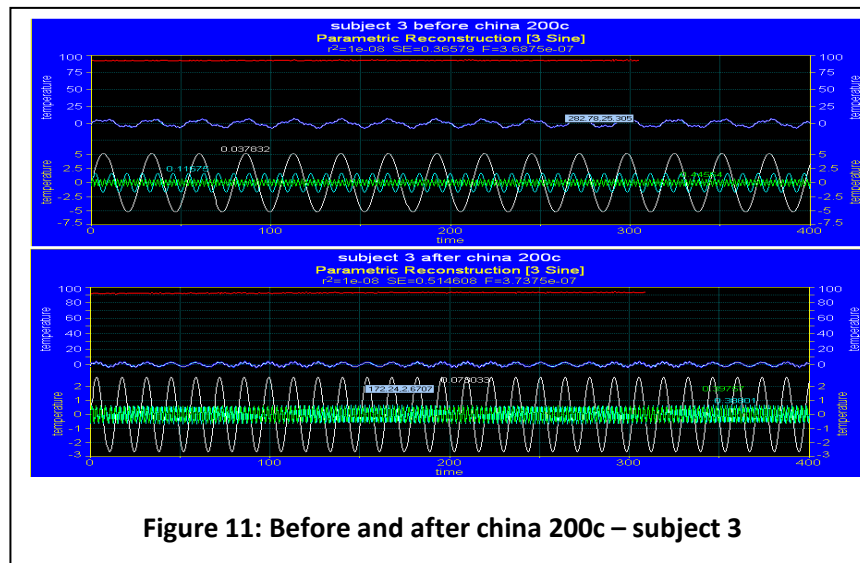


Figure 10: Before and after china 200c - subject 2

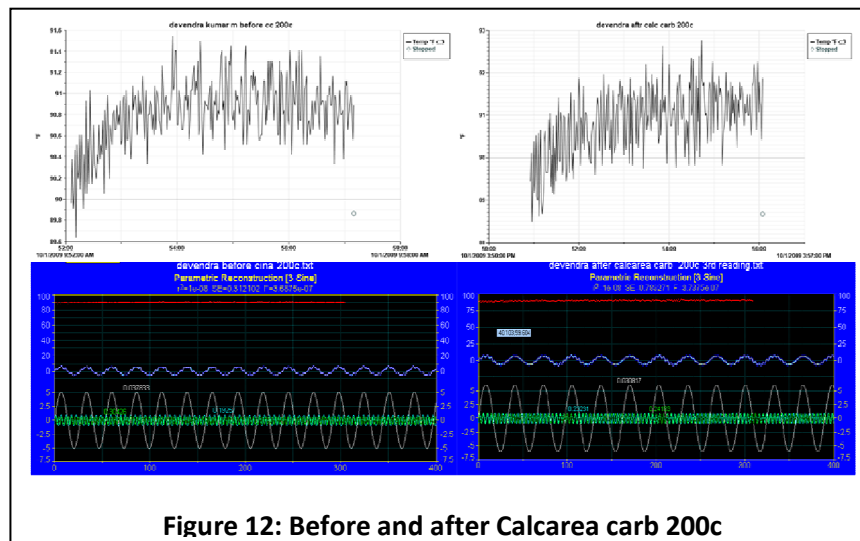
Subject 3: Before and after applied china 200c.



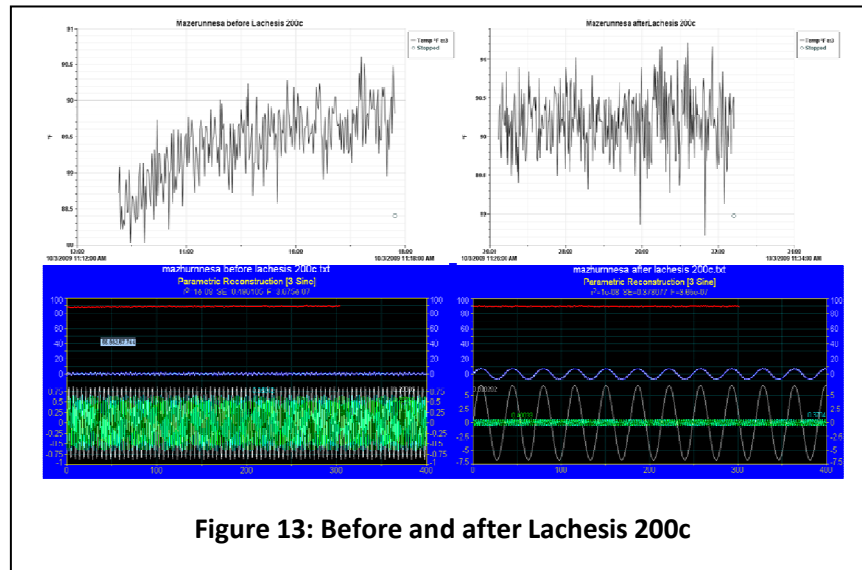
D) EXP No: 4

Experiments with other Homeopathic medicines:

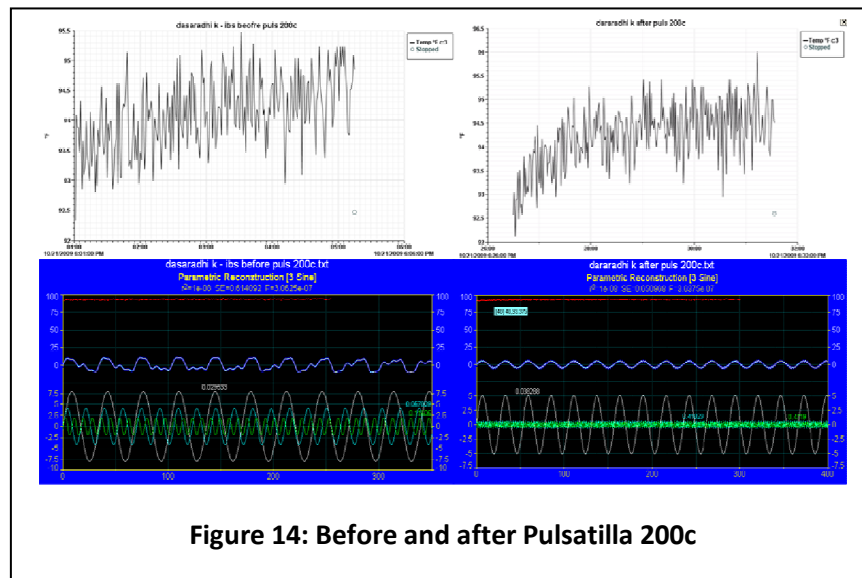
- i. The following picture shows graphs containing original temperature readings along with parametric prediction graph which is before and after applied Calcarea carb 200c.



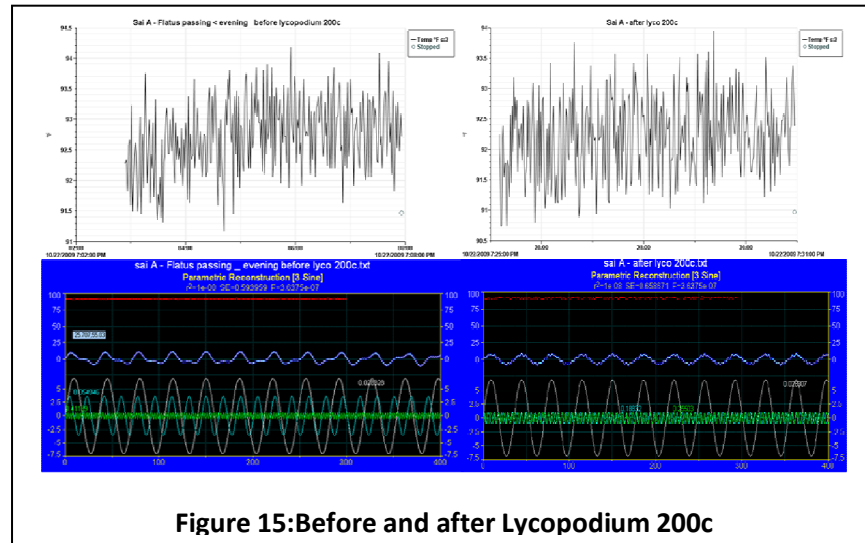
- ii. The following picture shows graphs containing original temperature readings along with parametric prediction graph which is before and after Lachesis 200c.



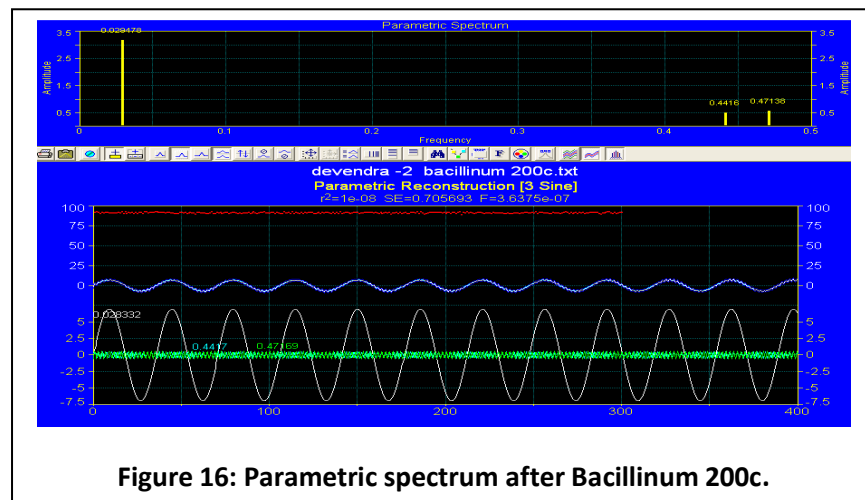
- iii. The following picture shows graphs containing original temperature readings along with parametric prediction graph which is before and after Pulsatilla 200c.



- iv. The following picture shows graphs containing original temperature readings along with parametric prediction graph which is before and after Lycopodium 200c.



- v. Parametric spectrum after applied Bacillinum 200c:



E) EXP No: 5

Experiments with some more Homeopathic medicines: The wave pattern in Parametric spectrum changed to smooth curves after applied homeopathic medicine like Natrum muriaticum, Kalium carbonicum, Lycopodium, Alumina etc.

In this experiment homeopathic medicine of freshly medicated 6 pills are applied orally, readings are taken after 15 minutes. Last two graphs are from subjects without applying any medicine.

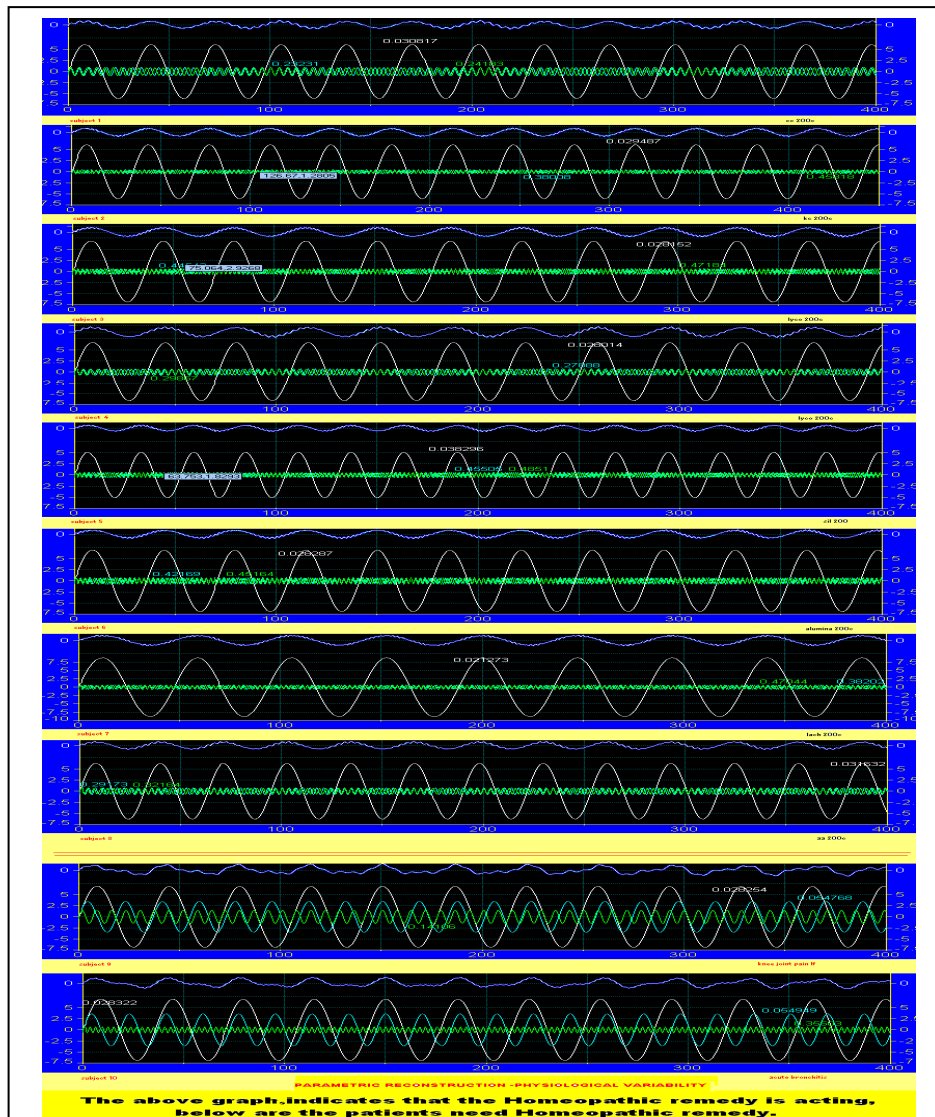


Figure 17: Parametric Spectrum after Homeopathic Remedy.

More Experiments and graphs are mentioned in annexure -1

Observations:

- 1) It can be observed from the above graphs that the irregular pattern in parametric graph is changed to smooth curves after applied homeopathic medicine. The change in graph pattern is observed within 30mins of applied homeopathic medicine.
- 2) The appearance of a pair of peaks in medium frequency of AR Spectrum is the indication for Homeopathic medicine action.

Table: 1

Experiment Number	Name of Homeopathic medicine	No of subjects	Responded	Change in wave pattern - Parametric spectrum	Change in Wave pattern – AR Spectrum
Exp no:1	Gelemium 200c	4	yes	Observed in 3 subjects	Observed in 4 subjects
Exp no:2	Sulphur 200c	4	yes	Observed in 2 subjects	Observed in 4 subjects
Exp no:3	China 200c	5	yes	Observed in 3 subjects	Observed in 5 subjects
Exp no:4	Calcarea carb 200c	1	Yes	Observed	Not observed
	Lachesis 200c	1	Yes	observed	Not observed
	Pulsatilla 200c	1	Yes	Observed	Not observed
	Lycopodium 200c	1	Yes	Observed	Not observed
	Bacillinum 200c	1	Yes	Observed	Observed in one subject
Exp no:5	Kali carb 200c	1	Yes	Observed	Not observed
	Lycopodium 200c	2	Yes	Observed	Not observed
	Arsenicum album 200c	1	Yes	Observed	Not observed
	Alumina 200c	1	Yes	Observed	Not observed
	Lachesis 200c	1	Yes	Observed	Not observed
Exp no:6	Sulphur 200c	7	Yes	Not observed	Observed in 4 subjects

Exp no:7	Sulphur 200c	5	Yes	Not observed	Observed in 3 subjects
Exp no:8	Lycopodium 200c	4	Yes	Not observed	Observed in 4 subjects
Exp no:9	Nat Mur 200c	3	Yes	Observed in 3 subjects	Not observed
	Pulsatilla 200c	2	Yes	Observed in 2 subjects	Not observed

In this study the results of 45 Homeopathic medicines before and after action is represented in the form of graphs. 23 (51%) subjects showed change in parametric spectrum. 25 (55%) subjects showed change in AR Spectrum. More results can be observed in annexure 1. The results discussed are only trial phase experiments.

Discussion:

Homeopathic medicine is considered as placebo due to the absence of medicinal substance beyond 1×10^{-12} dilution but this work reveals how Homeopathy works.

The change in graph patterns which are evident from the above results and observations is stanchly a clue for the action of Homeopathic medicines.

In case of experiments with Gelsemium 200c all the 4 subjects (Exp no:1) who have received medicine, produced change in AR Spectrum (Fig:5). The appearance of a pair of small peaks in medium frequency of AR Spectrum is indication for the action of homeopathic medicine. This experiment is conducted with placebo control. The placebo given subjects are failed to produce a pair of peaks in the medium frequency(Fig:5). The thing to observe in this experiment is, the readings are taken at same time of the day.

The first day placebo subject produced peaks as like Gelsemium subject (Fig: 5). This might be the result of placebo and Gelsemium 200c subjects sat close together while obtained temperature readings.

In case of experiments with Sulphur 200c (Exp no:2)as like Gelsemium subjects all the four subjects who have received medicine produced change in AR Spectrum(Fig:7). where as placebo given subjects are failed to produce peaks in medium frequency.

The parametric spectrum (Fig:8,Exp no:2)of 2 subjects out of 4 Sulphur 200c subjects showed change in wave pattern. This shows sensitivity of parametric prediction and reconstruction method. The graph pattern is easily disturbed by external impressions.

The medium frequency peaks of AR Spectrum produced in case of experiments with Gelsemium and Sulphur are not appeared at same frequency level in other experiments. The reason is, readings are taken at same time of the day in case of above mentioned Gelsemium and Sulphur experiments, but not in case of other experiments. It shows that the homeopathic medicine action also depends on the time of day. So it is not enabled to produce AR Spectrum for all mentioned remedies.

The change in pattern of variability produced by some homeopathic medicines observed through AR Spectrum is not reflected in Parametric spectrum. It may be due the difference in sensitivity of AR Spectral procedure and Parametric Spectrum.

In case of experiments with china 200c (Exp no:3) only 3 subjects out of 5 subjects showed change in variability pattern in parametric spectrum (Fig: 9,10,11).

In case of experiments with other medicines (Exp No:4) also, there is clear change in pattern of parametric reconstruction graph after applied homeopathic medicine.

Out of 45 subjects applied homeopathic medicine, 23 subjects (51%) showed change in parametric spectrum. 25 subjects (55%) showed change in AR Spectrum. Those subjects who have not showed change in AR Spectrum showed change in parametric spectrum and vice-versa. Results will be more favorable with sophisticated equipment (data loggers & sensors).

Homeopathic medicines produce certain change in physiological variability, it is evident from the above experiments. Homeopathic medicines have a straight impact on physiological phenomenon of living organisms. The physiological functions in living organisms are under control of Hypothalamus. So this work of measuring physiological variability in human body temperature after giving homeopathic medicine shows, the homeopathic medicines are acted on Hypothalamus. The physiological functions are influenced by homeopathic medicines, so the wave pattern in parametric reconstruction graphs in the above experiments are regular after applied homeopathic medicine. Indirectly it shows homeopathic medicines act on hypothalamus, disturbs the functions of hypothalamus in case of healthy subjects and set right the disturbance in diseased individuals.

The numerical summary for the graph patterns is not represented. This needs some more observation and wide extended study. In future this method of measuring physiological variability certainly offers quantification of Homeopathic medicine action.

Conclusion:

The change in pattern of '*Physiological Variability in Human Body Temperature*' after applied Homeopathic Medicine is an objective evidence for the action of Homeopathic medicine.

The experiment of measuring physiological *variability in human body temperature* is the straight answer for the mystery behind homeopathic medicine action. These experiments show Homeopathic medicine acts by producing change in physiological functions. The selection of homeopathic medicine by measuring physiological variability in human body temperature will be a unified method in homeopathy. This work certainly introduce new technique into the homeopathic system. The way of measuring temperature variability by data loggers and sensors for identification and selection of homeopathic medicine is one objective measure introducing for the first time even seen in homeopathy.

This method can be used in Homeopathic pharmacies for testing quality & standardization of Homeopathic medicines. The extended studies based on this work can lead into identification of specific patterns among hydrogen bonds in Homeopathic dilutions.

The forth coming experiments based on present trials lead into identification of specific patterns for the individual homeopathic medicines. The numerical values for obtained specific pattern of the remedy will be a guide for the selection of indicated medicine for diseased individual. This kind of work also pave a path to develop Computer programme for identification of homeopathic remedies.

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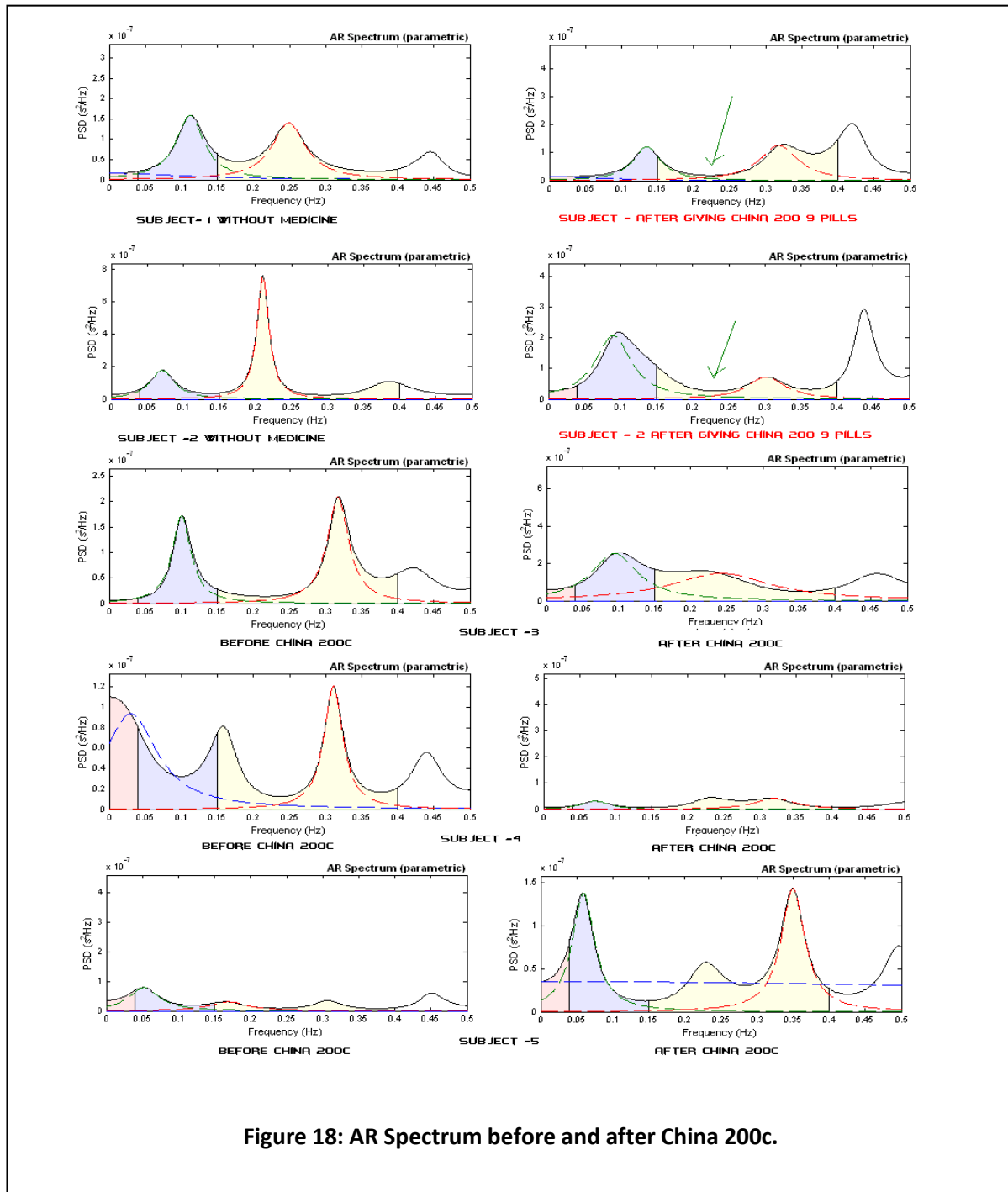
My special thanks to Mr.Sadiq Mohammad and Mr.P.Ramakrishna who helped me in procuring equipment from abroad.

ANNEXURE -1

Experiments with some other Homeopathic medicines:

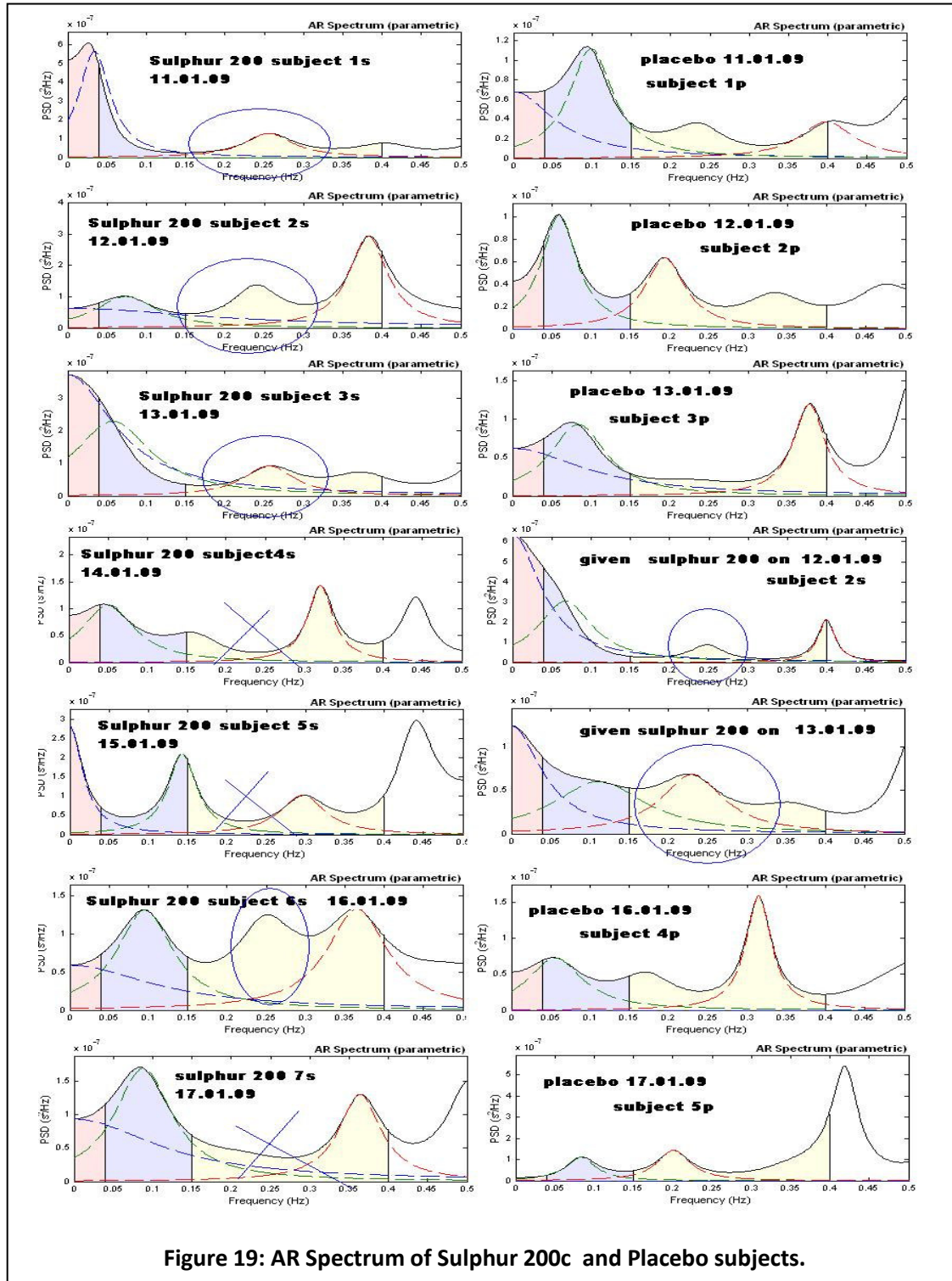
F) EXP No: 3

China 200c: AR Spectrum for 5 subjects: -Before and after applied china 200c



G) EXP No: 6

Experiment with Sulphur 200c: -Sulphur 200c has given to 7 subjects and placebo to 5 subjects. Readings are taken from 8.00-8.10am. Below are two columns of graphs. Left column contains graphs of Sulphur 200c subjects, right side are of Placebo subjects.



H) EXP No: 7

Experiment with Sulphur 200c: -AR Spectrum for Sulphur 200c and placebo subjects, readings are taken from 9.00am -9.10am: Below are two columns of graphs. Left column contains graphs of Sulphur 200c subjects, right side are of Placebo subjects. Appearance of a pair of peaks can be observed in Sulphur 200c, First 3 subjects Fig 20.

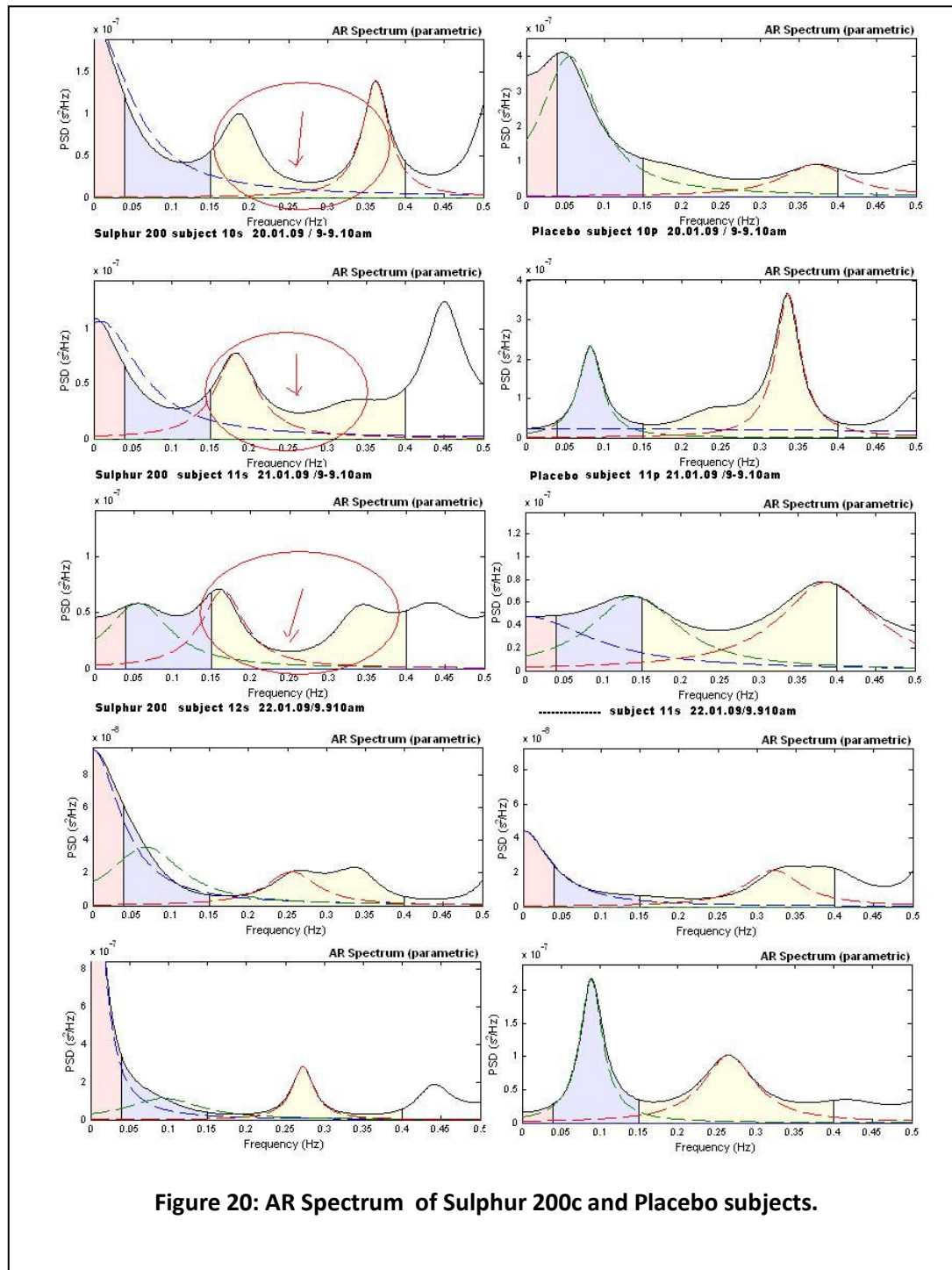
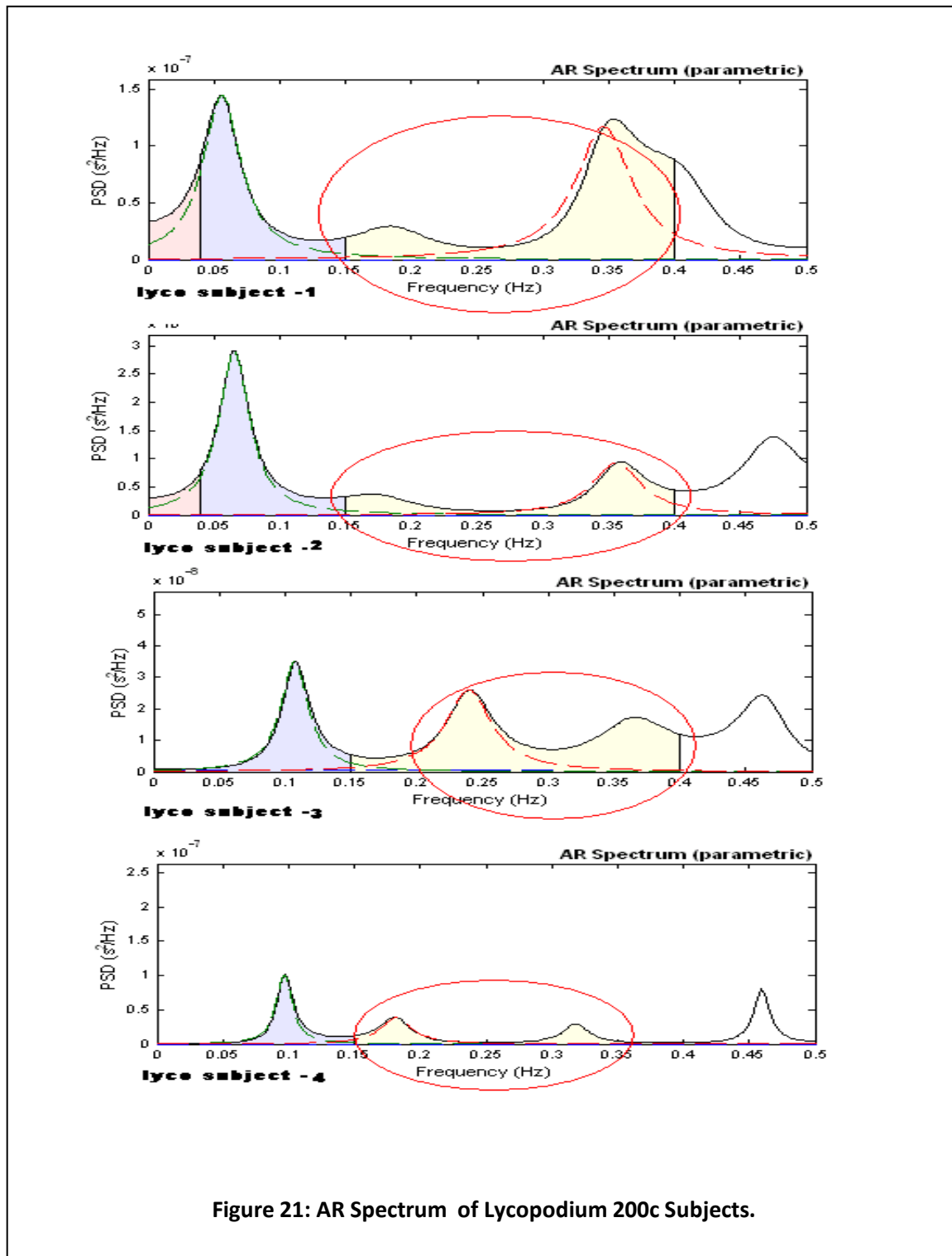


Figure 20: AR Spectrum of Sulphur 200c and Placebo subjects.

I) **EXP No: 8**

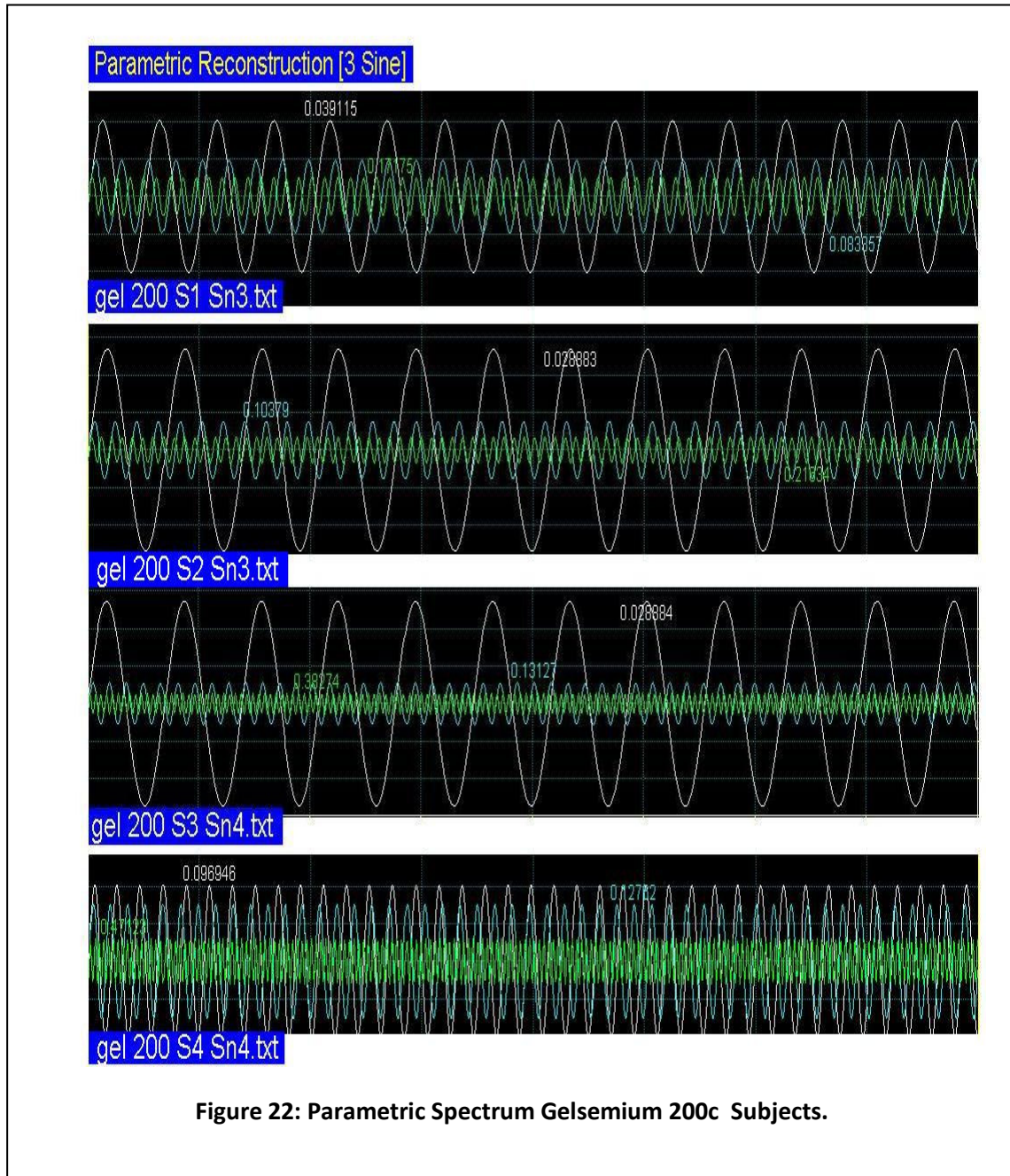
Experiment with Lycopodium 200c:AR Spectrum for Lycopodium 200c given to 4 subjects:



EXP No:1 Parametric spectrum for Gelsemium 200c given to 4 subjects:

Parametric Reconstruction applied to the data of temperature variability obtained after applied Gelsemium 200c to 4 subjects.

4th graph shows that the person not responded to medicine.



J) Exp No 9:

Another observation, immediately after applied homeopathic medicine for patients: Below are the parametric spectrum for the variability readings taken immediately after applied indicated medicine Natrum muriaticum 200c and Pulsatilla 200c.

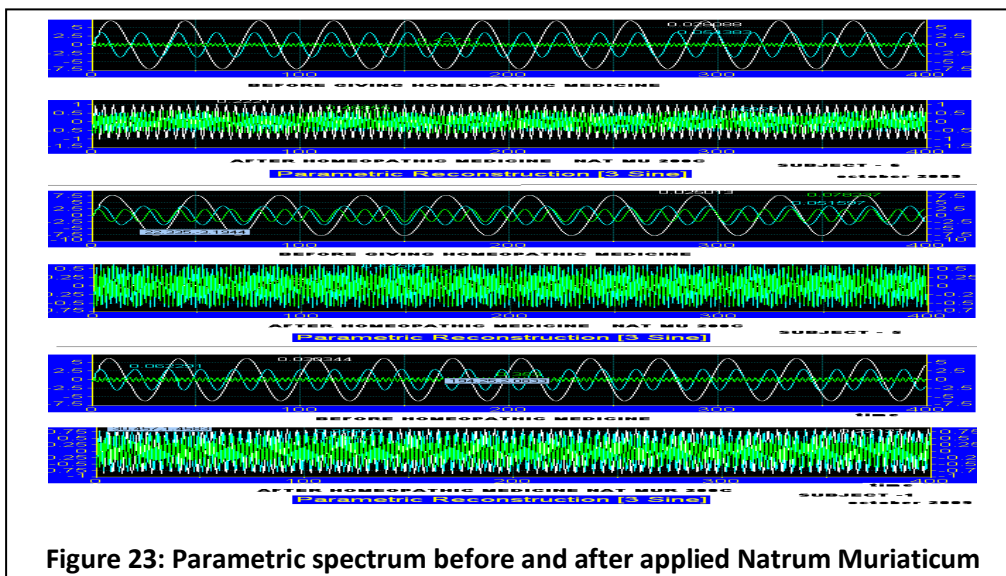


Figure 23: Parametric spectrum before and after applied Natrum Muriaticum

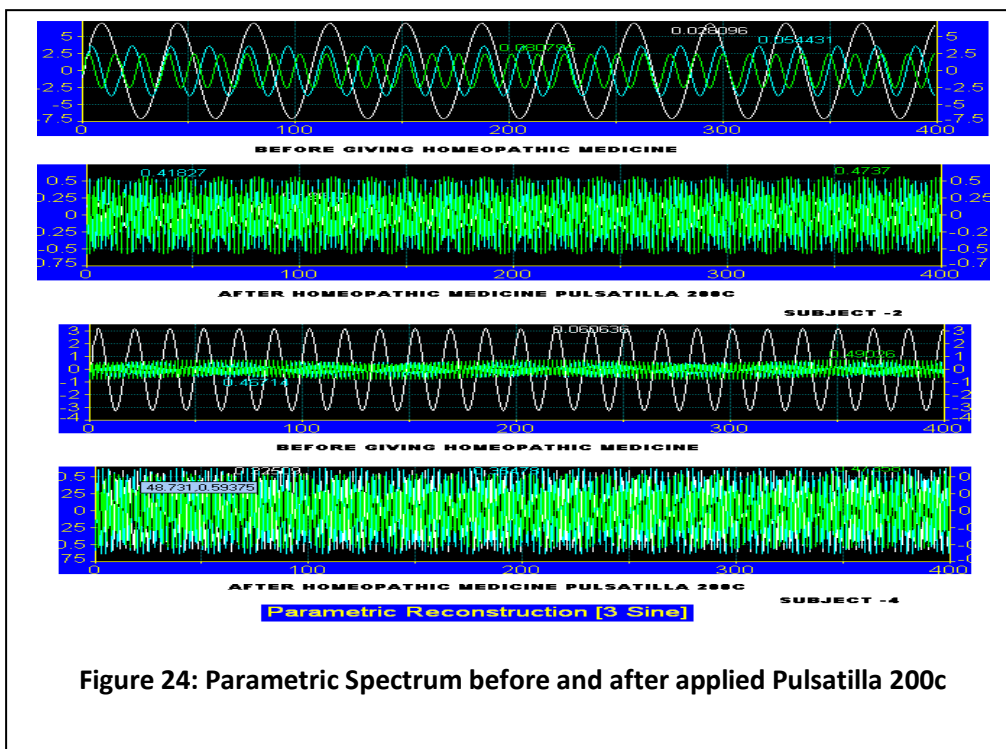


Figure 24: Parametric Spectrum before and after applied Pulsatilla 200c

Readers are requested to visit <http://homeoresearch.blogspot.com> for more graphs and information on this work.