Ground water depth prediction mathematical model based on Geopathic stress, body voltage and skin Resistance.

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Abstract: This paper attempts to contribute to the research by 2 Mathematical models – First model relating the body voltage of a person measured on the geopathic stress zone locations with the groundwater depth, second the Skin resistance of a person measured on the geopathic stress zone locations with the ground water depth. In this paper, geopathic stress is one of the causes which affects skin resistanceand body voltage of any human being.

Keywords: -Body-voltage, Ground water depth, Geopathic stress zone, Skin resistance.

INTRODUCTION:-

Geopathic Stress is the study of earth energies and their effect on human health.The importance of geopathic stress in spatial planning is recognized and used by many researchers; Bachler (1970), David Cowan(1996), Ralf Gordon (1990), Alan Hall (1997), Dr. G. Schneck (1995), Jane Thurnell-Read (1998), Bird 1997). However, only a few types of research have investigated the role of geopathic stress as a trigger factor for humans; N. P. Dharmadhikari (2011), Saravanan Manickam (2018), Gerhard WH (2008), Olsen and Bensis (2017), Kharat (2000), Anadi Sahoo, (2014), Ajay Poddar (2014), Pimplikar (2005). It may be noted here, that there does not exist any mathematical model which enables the predictionof the ground water depth or body voltage and skin resistance at specified spots due to the existence of geopathic stress zone. This paper attempts to contribute to the research by suggesting 2 mathematical models – First model relating the body voltage of a person measured on the geopathic stress zone locations with the ground water depth, second the Skin resistance of a person measured on the geopathic stress zone locations with the ground water depth.

The human system includes tissues which are based on the ions that are soluble in water molecules that have electric dipoles. The cells in the tissue retain a high concentration of potassium (K -) and sodium (Na +) ions, which are known as the sodium-potassium pump and have an active transport mechanism. A wave of electro-chemical activity is the nerve impulse. A large electrical signal is generated from different motor points on the surface of the body when a high proportion of tissues are contracted. The human body responds through the skin to the nerve stress and tension, called GSR (galvanic skin resistance). The GSR represents a change in the function of the sweat gland and the size of pores, regulated by the sympathetic central nervous. When the human body is excited, scared, or disordered, the level of body voltage and GSR are changed. Both chemical and physical changes are activated by the mechanism throughout the human body.High and low resistance to skin was also considered to be specifically associated with relaxation and stress, and a high resistance shows that the mind is pleasant and calm, whereas low resistance shows stress. The objective of this study is the measurement of skin resistance as well as body voltage using V-20biovoltmeter (R), the effect of GS (geopathic stress) on the body of the human being, GSR2-biofeedback (R) device in and around the geopathic stress pre-detected position on the Mumbai Pune highway and in resident regions in Pune City (India).

RESEARCH METHODOLOGY:-

Firstly 5 Locations around the Pune district were selected with the existence of a geopathic stress zone. The resistivity method indicated the existence of the groundwater vein. Body voltage (Figure 1) was checked at each location for normal volunteers aged 19 to 36 years. The readings have been monitored and accurately mapped

(Figures 2). Each subject has been checked at each location for more than twenty minutes. The estimation of skin resistance has been examined by GSR-2 biofeedback device recording tone strength. The GSR-2 biofeedback device was activated and the fingers on the sensing plates were mounted. The dial then was slowly switched to a tone that was registered with the sound level meter (SL-4010) in dB as GSR-2 biofeedback device outcome. Considering each volunteer's time spent in the geopathic stress zone, there was a calm and relaxed tone strength reported by the GSR unit (figures4). After 20 minutes, when the fingers were withdrawn from the sensing pads, the stress zone GSR-2 biofeedback device automatically was terminated. For calculation of body voltage, one end of the unit is grounded in the ground and the other end is held in the person's hand, which has a golden electrode. It was calculated the body voltage. The Linear Regression model is used to show the relation of water vein depth with body voltage and skin resistance.Body voltage residual plot (figure 5) and Skin resistance residual plot (Figure 6) shows data is suitable for linear regression model. The Line Fit plot for body voltage (fiugre7) and skin resistance (figure 8) is used to find a relationship in a scatter plot of different data points.

Normal Probability Plot for body voltage (figure9) and Skin Resistance (figure 10) is plotted for avaibility of data. All the collected data is used as input for the linear regression model and slope and y-intercept calculated (Table 1 and Table 2). All the calculated value is submitted in a linear regression formula for the required result.

Observations:-

It is observed (figure 1), the body voltage was raised over the geopathic stress zone through all the volunteers' reading. Growing age body voltage in the geopathic stress zone was also found to be significantly higher (Figures 2). Observation of the resistance of the skin measured in the GSR-2, biofeedback method, suggests that the tone strength varies compared to the standard zone in the geopathic stress zone (Figure 3). The strength of the tone rises with the volunteers' age was also observed (Figures 4). Average body voltage and strength of tone measures were measured statistically in and out of the geopathic stress zone for fourteen separate aging group candidates. As a result, the body voltage varies considerably and the tone strength of GSR-2 changes dramatically.

The derived linear regression model is tested with our observation that gives an approximate value of water vein depth for both skin resistance as well as body voltage. So, it is observed that if body voltage or skin resistance is known we can find ground water depth at a particular location. This model helps to determine the impact of the geopathic stress zone on the human body and avoids body illness.

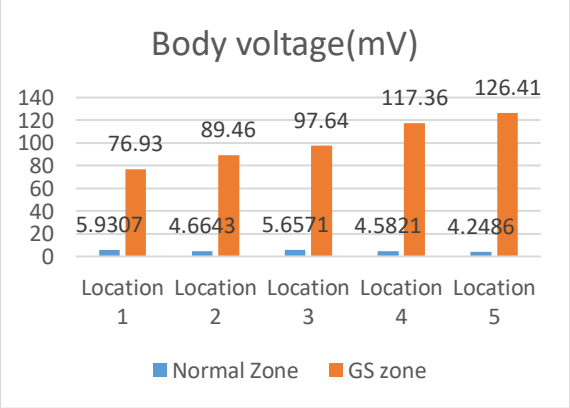

Figure1. Location wise variation in body voltage (mV).

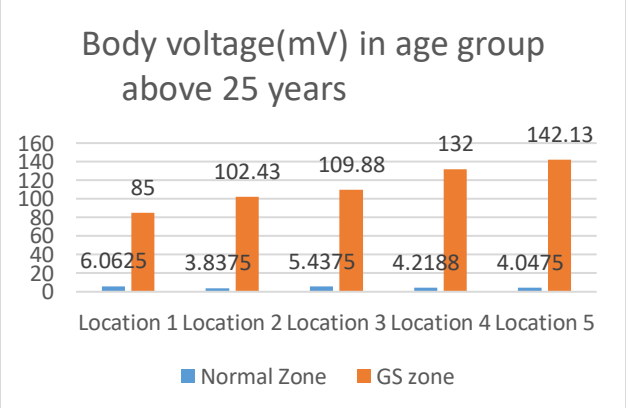

Figure 2. Variation in body voltage for different location in age>25

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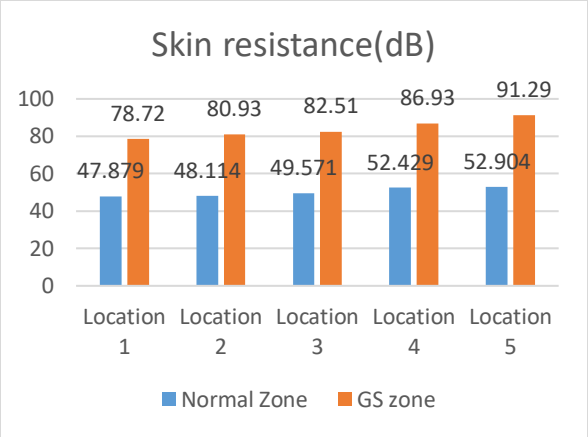

Figure 3. Location wise variation in Skin Resistance (dB).

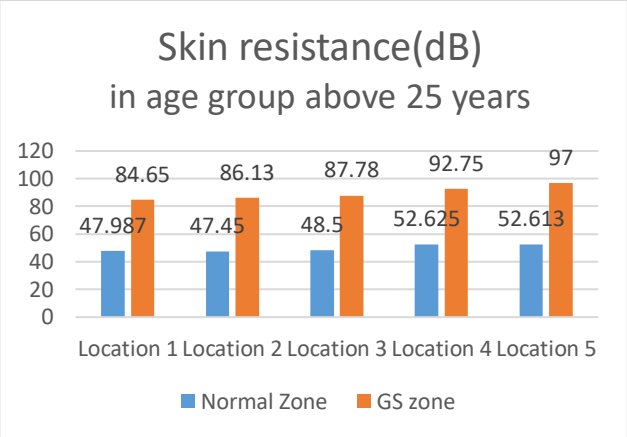

Figure 4. . Variation in Skin registance for different location in age above 25 year group

The relationship between the two variables is a linear regression model. The equation is Y= a + bX, where X is the independent variable, b is the slope of the line,Y is the dependent variable, and a is the y-intercept

A **residual plot** graph displays the independent variable on the horizontal axis and residuals on the vertical axis. If the points in a residual plot are uniformly distributed along the horizontal axis, the data is subject to a linear regression model; a nonlinear model would otherwise be more suitable.
Residual analysis is performed for both the data i.e. Body voltage and skin resistance.

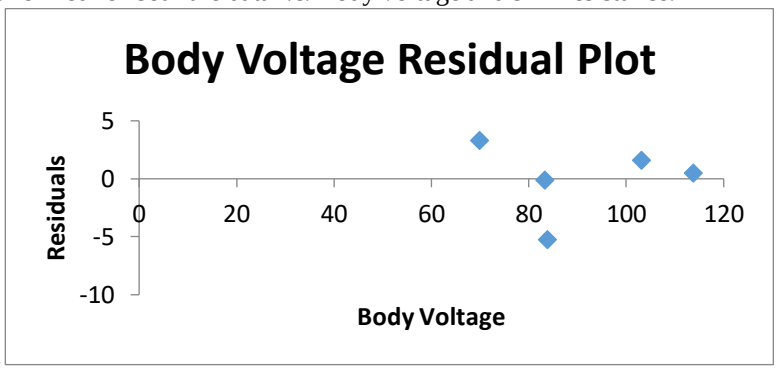

Figure5: Body voltage residual plot

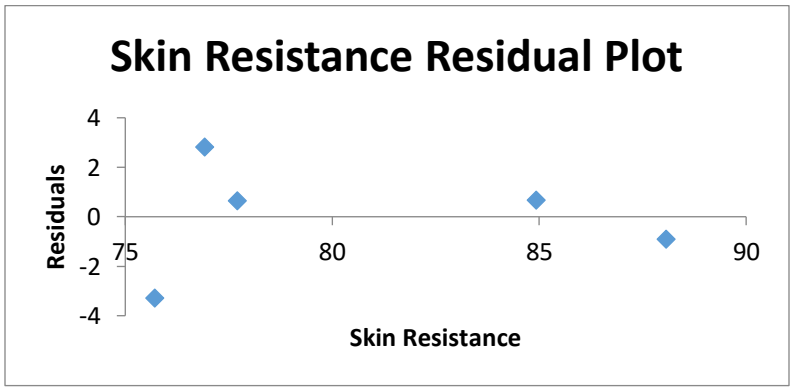

Figure6: Skin resistance residual plot

The residual plot is very random. This random pattern shows that a linear model matches the data appropriately.

The Line Fit plot for body voltage is used to find a relationship in a scatter plot of different data points.

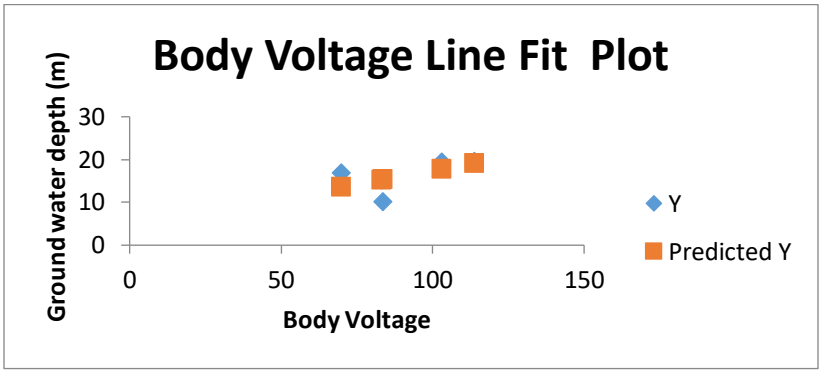

Figure7: Body voltage line of fit plot

The Line Fit plot for Skin resistance is used to find a relationship in a scatter plot of different data points.

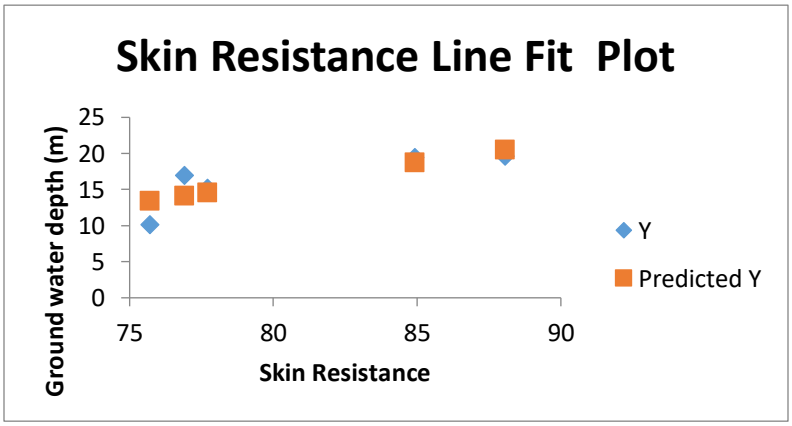

Figure 8: Skin resistance line of fit plot

A normal probability plot is a graphical tool for determining whether data is available or not. The set is usually distributed roughly.

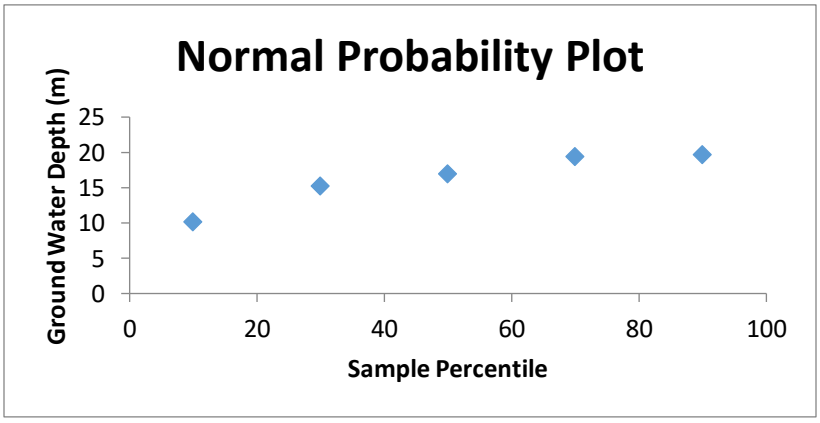

Figure9: Normal Probability Plot for Body Voltage

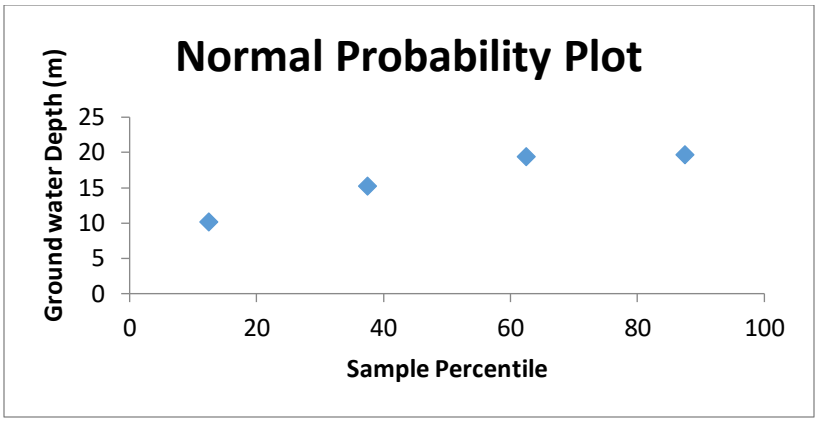

Figure10:Normal Probability Plot for Skin Resistance

To show the relationship between body voltage and skin resistance with Ground water depth we have used a linear regression model

Ground Water Depth = a + b* (Body voltage) (i.e. y = a + b x)

1. Linear regression model for Ground water depth with a Body voltage

S. No.	X= Body voltage(mV)	Y= Ground water depth(m)	xy	y^2	x^2
1	69.85714	16.96	1184.777	287.6416	4880.02
2	83.72857	10.15	849.845	103.0225	7010.474
3	83.3	15.24	1269.492	232.2576	6938.89
4	103.0429	19.44	2003.153	377.9136	10617.83
5	113.8	19.68	2239.584	387.3024	12950.44
∑	**453.7286**	**81.47**	**7546.851**	**1388.138**	**42397.65**

Table 1: calculations for linear regression

$$a = \frac{(\sum y)(\sum x^2) - (\sum x)(\sum xy)}{n((\sum x^2) - (\sum x)^2}$$

$$b = \frac{n(\sum xy) - (\sum x)(\sum y)}{n((\sum x^2) - (\sum x)^2}$$

a = 4.889123

b = 0.12568

y= 4.889123 + (0.12568) x

Ground Water Depth = 4.889123 + [(0.12568) * (Body Voltage)]

Similarly

Ground Water Depth = a + b* (Skin resistance) (i.e. y = a + b x)

2. Linear regression model for Ground water depth with Skin Resistance

S. No.	X= Skin resistance(dB)	Y= Ground water depth(m)	xy	y^2	x^2
1	76.92286	16.96	1304.612	287.6416	5917.126
2	75.71429	10.15	768.5	103.0225	5732.653
3	77.71286	15.24	1184.344	232.2576	6039.288
4	84.92857	19.44	1651.011	377.9136	7212.862
5	88.07143	19.68	1733.246	387.3024	7756.577
∑	403.35	**81.47**	**6641.713**	**1388.138**	**32658.51**

Table 2: calculations for linear regression

$$a = \frac{(\sum y)(\sum x^2) - (\sum x)(\sum xy)}{n((\sum x^2) - (\sum x)^2}$$

$$b = \frac{n(\sum xy) - (\sum x)(\sum y)}{n((\sum x^2) - (\sum x)^2}$$

a = -30.3445

b = 0.578139

Y= -30.3445+0.578139X

Ground water depth = [-30.3445+0.578139*(Skin Resistance)]

Results:-

It is observed that by substituting values of body voltage and skin resistance for a particular location we can find the depth of underground water. Which proves mathematically that due to presence of Geopathic stress zone Body voltage and skin resistance of human being may affect which leads to serious illness, also it is very helpful for digging of water well and bore well.

Discussion:-

The work attempts to demonstrate that there is some kind of subtle energy in the Geopathic stress zone that influences the human system. Mathematically, variations in electrical skin resistance and body voltage as per the depth of the underground water can eliminate the subjectivity of dowsing. Thus, the mathematical approach for detecting subterranean features such as groundwater using the human system can be concluded to disrupt the skin resistance and body voltage. It can be inferred further that the geopathic stress zone can cause ill health.

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