Research

What is the relationship between humidity and temperature?

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In the name of Allah the Merciful would like to thank everyone who helped me and helped me in this Research, and a special thanks to my helpful teachers Wafa Al-Balawi and Maryam Al-Yousef Who stood beside me throughout the study period, Where they helped me with their advice and guidance. I especially thank my mom and dad who helped me and supported me in every possible way to complete this research.

The objective of the present study was to identify the type and degree of relationship between temperature and humidity during the months of March and April 2017 in Dhahran city. To achieve the objective of the study, the researcher observed and recorded the temperature and humidity in constant conditions throughout the duration of the study, Statistically using the Excel program, the researcher calculated the Pearson correlation coefficient between temperature and humidity. The results showed Pearson's coefficient of the studied data at -0.17303. This shows an inverse correlation between temperature and humidity at this level, which corresponds to the recorded rates.

Chapter 1

Introduction

Temperature and humidity are the most important components of the climate and have the most affect on many other components, in addition to their obvious impact on the human activities and natural chains of the living organisms on this land. The importance of observing these components and exploring the relationship between them continuously in different countries Of the world is of continuous and renewed importance to be able to be aware of any changes that may occur in the recorded rates for one reason or another. This is why the current study is interested in exploring the relationship between temperature and humidity during the months of March and April 2017 in Dhahran City.

The research question is:

What is the relationship between temperature and humidity during the months of March and April 2017 in the city of Dhahran?

Temperature:
Heat is a form of energy. It is one of
The most important elements of the climate, they have a direct impact on human activity, clothing and food,
It also affects on most climate elements such as atmospheric pressure, wind, evaporation, relative humidity, and condensation.
Temperature measures
Below we present the most important simple metrics
To the temperature used in the study of climate and meteorology
1- Great temperature
2. The minimum temperature
3. Daily average temperature
Temperature measurement
Thermometers measure temperature

And the inventor of the thermometer is Galileo in 1592. The most widely used species in meteorology is fluid expansion or contraction in an enclosed glass tube containing liquid such as mercury or alcohol. The liquid level refers to the temperature at any time. The temperature is measured on the surface of the earth and under the ground with soil

Surface of the earth temperature

The surface of the earth temperature depends on several factors: the four seasons, the surface, the wind, the clouds and the time of day. So The temperature in the night is lower than in the day, and decreases more in winter than in the summer, and in rainy areas, the temperature is lower than in the barren areas.

The maximum temperature of the surface of the earth reached more than (50 ° C) in the desert areas and this rise is a lot of temperature to, for reasons, including

1 - the absence of clouds, which increases the net radiation significantly

2 - the weakness of energy transmission down because the surface of the connection is bad

3 - poor transmission of energy load because of the stillness of the wind

Air temperature and Stevenson Box

The temperature is measured at multiple levels of the troposphere. The temperature is measured in the Stevenson Booth, a white, well-ventilated box that rises about a meter and a half from the ground.
Temperature measurement units
1- Centigrade
2 - Fahrenheit degrees
3 - the total degree

Temperature conversion can be done by calculations
Humidity
Air humidity is the amount of water vapor present in the atmosphere, estimated at 0.001% of the earth's water. The concentration of water vapor in the atmosphere varies from place to place and ranges from zero to 4%. Any 4 grams of water vapor per 100 grams of air. The air receives water vapor through evaporation and sublimation. The air loses water vapor through the processes of cathaf and sedimentation. Some condensate water vapor falls to the ground in the form of rain and snow.
Knowing the amount of water vapor present at a particular time and place is important for

meteorology because of the importance of the role of water in the following air operations:
1 - The transformation of water from one case to another, important air operations, and water vapor is the basis of the composition of weather phenomena such as dew, fog, frost, rain, snow and cold
- The release of energy when condensation or sedimentation is an important source of energy and then the general air cycle.
3 - Water vapor of the gases is important and active in the absorption of radiation so it has a significant impact on the balance of energy to the Earth and is a greenhouse gases
Factors affecting moisture
1- Availability of water
2- Degree of presentation
3 - distance from the sea
4 - rise from sea level
5. Chapters
6. There are daily changes in their causes:
• Wind movement
• Do not beat the amount of dew on the air humidity
• Current activity
• Sea breeze
Moisture meters

1- Pressure of water vapor
2. Specific humidity
3 - dew point
4. Why do we do this research?
5. None of the topics of climatology has received sufficient attention as it has in recent years. Every day geology, plant, animal, human, astronomical and other sciences provide us with new and compelling evidence of climate.
6 - Despite the theories that have taken place in this regard, there is almost no theory of criticism, and even so far not accepted one theory is acceptable, but it is important to give even a simple idea of the most important facts about the old climate, how can discuss these The foundations on which these facts are based.
7. The idea of the nebulae theory regarding the formation of the solar system prevailed

Chapter 2

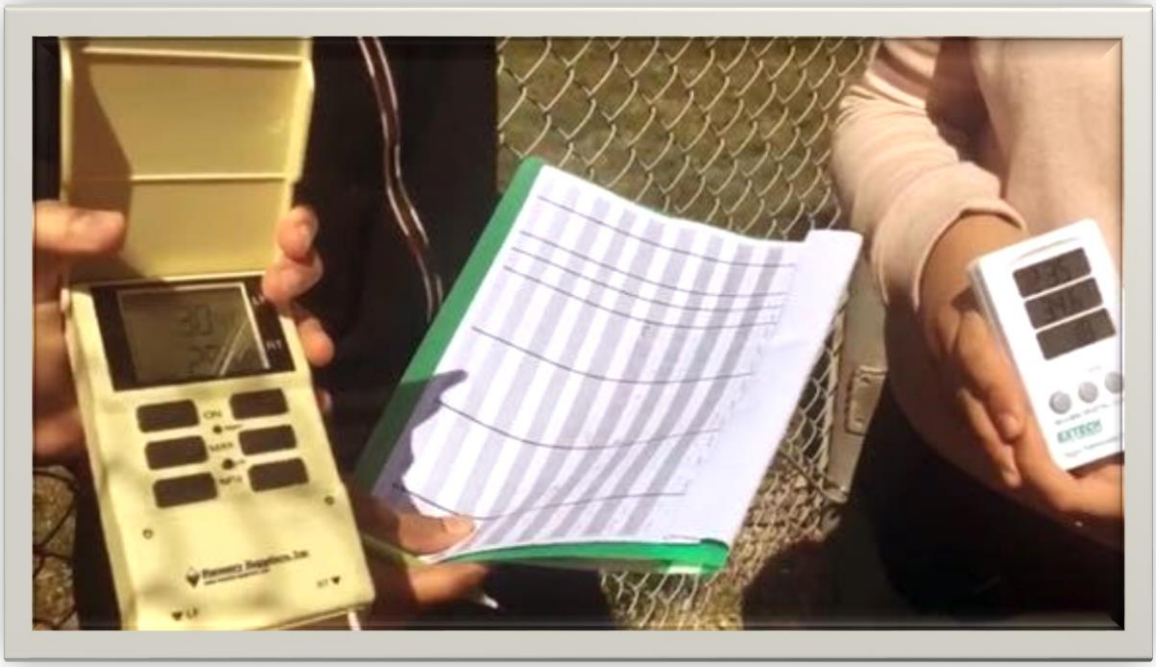
Search Hypothesis:

There is an inverse relationship between temperature and humidity in Dhahran during March and April 2017.

Study Procedures:

1. The temperature of the thermometer was recorded using a thermometer and at 12 pm during the months of March and April at the same site (Third Middle School in Dhahran)
2. Humidity was recorded using the Hyprometer meter and at 12pm during the months of March and April at the same location (Third Middle School in Dhahran)
3. All data were recorded in special tables prepared for that and then unloaded in the Excel program.

The data were processed statistically using the Excel program and Pearson correlation coefficient was extracted between normal temperature and normal humidity.



A photograph of the student and her colleagues collecting the data next to Stevenson's box at 12 pm using the hypometer and the thermometer

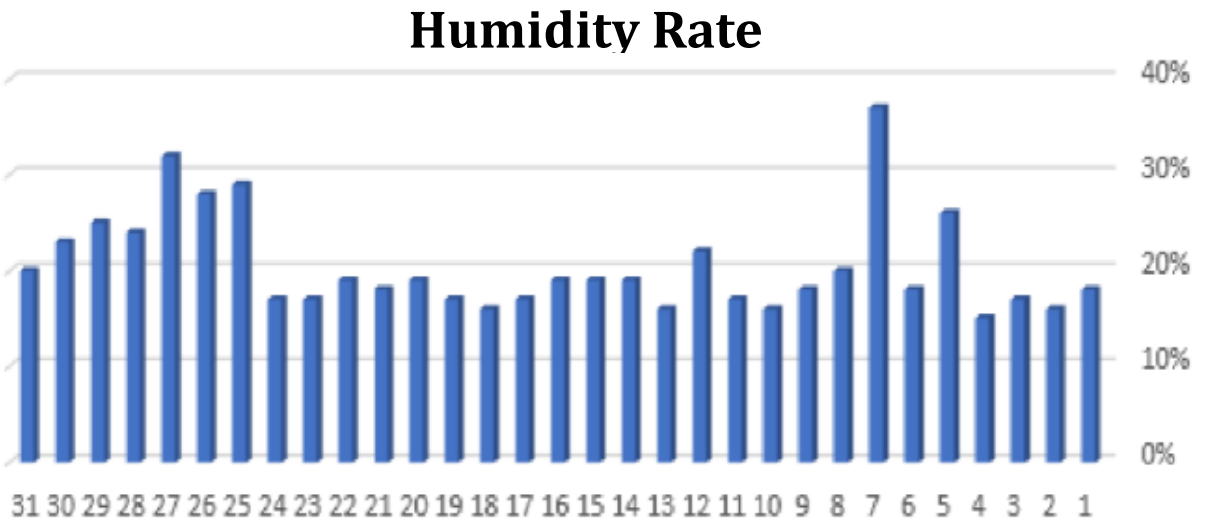
Review Results: After the data collection and processing using the

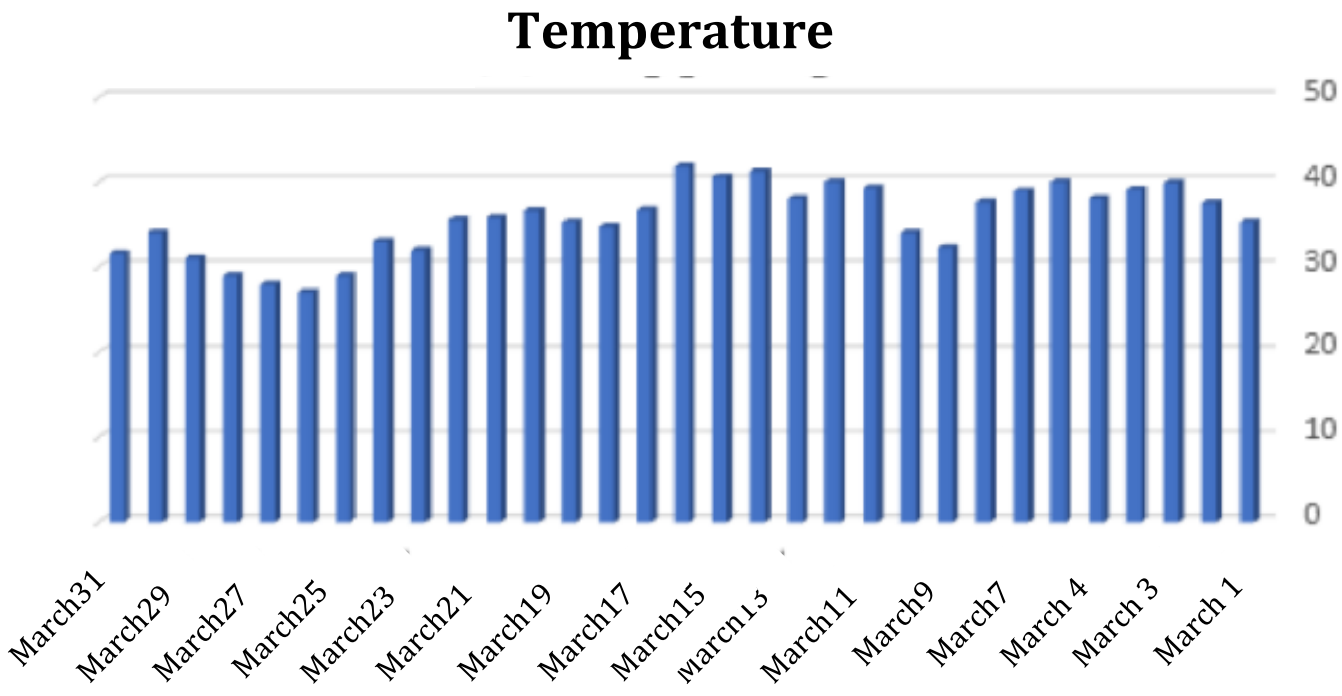
Excel program where Pearson correlation coefficient was calculated to explore the relationship between temperature and humidity in Dhahran City during the months of March and April 2017, the coefficient of correlation -0.17303Which proves an inverse relationship between temperature and humidity in Dhahran City as shown in the following table (used a Normal temperature, and normal humidity after conversion from a percentage to a Numerical value were used for statistical analysis)

day	date	temperature			%Humidity		
		normal	MAX	MIN	normal	MAX	MIN
mo	5/1/2017	35.3	37.1	24.5	18%	92%	15%
tu	5/2/2017	37.5	37.5	24.6	16%	92%	15%
we	2/3/2017	39.9	42.7	21.2	17%	92%	15%
th	5/4/2017	39.1	39.2	29.2	15%	90%	17%
fr	5/5/2017	38	39.7	31.5	26%		
sa	5/6/2017	40	41.8	23.4	18%		
su	5/7/2017	38.9	41.8	23.4	37%	43%	15%
mo	5/8/2017	37.6	39.3	29.2	20%	43%	15%
tu	5/9/2017	32.3	37.1	25.8	18%	31%	15%
we	5/10/2017						
th	5/11/2017	39.3	39.5	39.3	16%	56%	15%
fr	5/12/2017	40	41.5	26.4	17%	56%	15%
sa	5/13/2017	38	39.2	26.4	22%	56%	15%
su	5/14/2017	37.8	40.1	26.9	16%	56%	15%
mo	5/15/2017	41.3	41.9	25.5	19%	56%	15%
tu	5/16/2017	40.6	41.1	41	19%	56%	15%
we	5/17/2017	41.9	42.1	28	19%	80%	15%
th	5/5/2017	36.7	42.9	29.3	17%	80%	15%
fr	5/19/2017		41.7	26.7			

sa	5/20/2017		42.6	29.7			
su	5/21/2017	34.7			19%		
mo	5/22/2017	35.3	39.9	33.3	18%	80%	15%
tu	5/23/2017	36.6	37.4	35.6	19%	81%	15%
we	5/24/2017	35.8			17%	86%	15%
th	5/25/2017	35.6	42.6	24.8	17%	86%	15%
sa	4/1/2017	32	25.7	18.2	29%		
su	4/2/2017	33		13.6	28		
mo	4/3/2017	29	29.6	19.9	32		
tu	4/4/2017	27	31.6	22.6	24%		
we	4/5/2017	28	32.1	21.8	25%		
th	4/6/2017	29	30	20	16%		
fr	4/7/2017	31	33	23	21%		
sa	4/8/2017	34	35	21	24%	92%	15%
su	4/9/2017	31.6	31.5	30.8	20%	92%	15%
mo	4/10/2017	34.4	34.9	26.8	18%	92%	15%
tu	4/11/2017	34.6	34.8	33.7	18%	92%	15%
we	4/12/2017	36.4	36.6	35.6	17%	92%	15%
th	4/13/2017	37.4	37.6	37.3	17%	92%	15%
Fr	4/14/2017	39	39.7	25.7	11%		
sa	4/15/2017	37	35.3	25	22%		
su	4/16/2017	29.6	35.3	25	15%		
mo	4/17/2017	29.3	30.3	29.2	16%		
tu	4/18/2017	32.4	33.7	28	19%		
we	4/19/2017	34.7	36.3	23.3	18%		
th	4/20/2017	28.9	29	28.6	16%	38%	15.4%
fr	4/21/2017	34	33.2	19.8	11%	92%	15%
sa	4/22/2017	22	34	23.2	28%	93%	15%
su	4/23/2017	36.8	37.3	37.4	17%	92%	15%

The relationship between humidity and temperature





Results

The results of the data analysis showed an adverse relationship between temperature and humidity in Dhahran City during the months of March and April 2017, which is in line with the imposition of the study.

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