Lab. Meteorological Statistics ........ Fourth stage

(First Semester)

Department of Atmospheric Sciences

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**D. Mean Center :**

the mean was discussed as an important measure of central tendency for a set of data. If this concept of central tendency is extended to locational point data in two dimensions (X and Y coordinates), the average location, called the mean center, can be determined. the only stipulation is that the phenomenon can be displayed graphically as a set of points in a two-dimensional coordinate system.

The directional orientation of the coordinate axes and the location of the origin are both arbitrary.

Once a coordinate system has been established and the coordinates of each point determined, the mean center can be calculated by separately averaging the X and Y coordinates, as follows:

 **,** 

**where:**

= mean center of X

= mean center of Y

Xi = X coordinate of point i Yi = Y coordinate of point i

n = number of points in the distribution

**for example\ Calculate the central mean of the following data**

|  |  |  |
| --- | --- | --- |
| **Point**  | **Xi**  | **Yi**  |
| **A**  | **61**  | **33**  |
| **B**  | **80**  | **20**  |
| **C**  | **10**  | **18**  |
| **D**  | **12**  | **14**  |
| **E**  | **20**  | **12**  |

**H.W\**

**- Calculate the central mean of The following points represent weather stations centers.**

|  |  |  |
| --- | --- | --- |
| **weather stations centers** | **X**  | **Y**  |
| **1**  | **10**  | **4**  |
| **2**  | **16**  | **8**  |
| **3**  | **8**  | **9**  |
| **4**  | **24**  | **12**  |
| **5**  | **18**  | **16**  |
| **6**  | **28**  | **13**  |
| **7**  | **11**  | **10**  |
| **8**  | **30**  | **20**  |