

(c) The method given in this paragraph shall be used to compute the distance between two reference points, except that, for computation of distance involving stations in Canada and Mexico, the method for distance computation specified in the applicable international agreement shall be used instead. The method set forth in this paragraph is valid only for distances not exceeding 475 km (295 miles).

(1) Convert the latitudes and longitudes of each reference point from degree-minute-second format to degree-decimal format by dividing minutes by 60 and seconds by 3600, then adding the results to degrees.

(2) Calculate the middle latitude between the two reference points by averaging the two latitudes as follows:

$$ML = (LAT1_{dd} + LAT2_{dd}) \div 2$$

(3) Calculate the number of kilometers per degree latitude difference for the middle latitude calculated in paragraph (c)(2) as follows:

$$KPD_{lat} = 111.13209 - 0.56605 \cos(2ML) + 0.00120 \cos(4ML)$$

(4) Calculate the number of kilometers per degree longitude difference for the middle latitude calculated in paragraph (c)(2) as follows:

$$KPD_{lon} = 111.41513 \cos(ML) - 0.09455 \cos(3ML) + 0.00012 \cos(5ML)$$

(5) Calculate the North-South distance in kilometers as follows:

$$NS = KPD_{lat}(LAT1_{dd} - LAT2_{dd})$$

(6) Calculate the East-West distance in kilometers as follows:

$$EW = KPD_{lon}(LON1_{dd} - LON2_{dd})$$

(7) Calculate the distance between the two reference points by taking the square root of the sum of the squares of the East-West and North-South distances as follows:

$$DIST = (NS^2 + EW^2)^{0.5}$$

(8) Round the distance to the nearest kilometer.

(9) Terms used in this section are defined as follows:

(i)  $LAT1_{dd}$  and  $LON1_{dd}$ =the coordinates of the first reference point in degree-decimal format.

(ii)  $LAT2_{dd}$  and  $LON2_{dd}$ =the coordinates of the second reference point in degree-decimal format.

(iii)  $ML$ =the middle latitude in degree-decimal format.

(iv)  $KPD_{lat}$ =the number of kilometers per degree of latitude at a given middle latitude.

(v)  $KPD_{lon}$ =the number of kilometers per degree of longitude at a given middle latitude.

(vi)  $NS$ =the North-South distance in kilometers.

(vii)  $EW$ =the East-West distance in kilometers.

(viii)  $DIST$ =the distance between the two reference points, in kilometers.

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#### § 73.209 Protection from interference.

(a) Permittees and licensees of FM broadcast stations are not protected from any interference which may be caused by the grant of a new station, or of authority to modify the facilities of an existing station, in accordance with the provisions of this subpart. However, they are protected from interference caused by Class D (secondary) noncommercial educational FM stations. See § 73.509.

(b) The nature and extent of the protection from interference afforded FM broadcast stations operating on Channels 221-300 is limited to that which results when assignments are made in accordance with the rules in this subpart.

(c) Permittees and licensees of FM stations are not protected from interference which may be caused by the grant of a new LPFM station or of authority to modify an existing LPFM station, except as provided in subpart G of this part.

[43 FR 39715, Sept. 6, 1978 and 48 FR 29505, June 27, 1983; 54 FR 9802, Mar. 8, 1989; 65 FR 7640, Feb. 15, 2000; 65 FR 67299, Nov. 9, 2000]

#### § 73.210 Station classes.

(a) The rules applicable to a particular station, including minimum and maximum facilities requirements, are determined by its class. Possible class designations depend upon the zone in which the station's transmitter