

电力系统

陕西省冰区划分

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摘要:

介绍了气象站电线积冰观测资料和观冰站导线覆冰观测资料的获取方法以及积冰物理模型, 论证了气象站电线积冰观测与输电线路覆冰观测的等效性。利用皮尔逊III型分布理论计算了陕西省50 a一遇电线积冰厚度, 指出该积冰厚度与1月份的平均风速、平均降水量和海拔分别存在显著的线性关系, 并存在更为显著的2次多项式关系。利用冰厚与三者的2次多项式关系分别拟合陕西省不同地区的冰厚, 取3个结果的平均值作为最终冰厚, 并以此对陕西省进行冰区划分。

关键词:

Regional Division of Ice Zone in Shaanxi Province Based on Thickness of Ice Accretion on Conductors

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Abstract:

The methods to acquire weather station's observational data of ice accretion on transmission lines and ice-observing station's observational data of ice coating on conductors as well as the physical model of ice accretion are presented. The equivalency between the observation of ice accretion on transmission lines by weather station and that of ice coating on transmission lines is demonstrated. Using Pearson III distribution theory, the thickness of ice accretion on conductors once in 5-decade in Shaanxi Province of China is calculated and the thickness of ice accretion at the height of 15m and 20m is respectively modified by height coefficient; the relation of the thickness of ice accretion with the mean temperature, humidity, vapor pressure, average precipitation, wind velocity and elevation are analyzed and it is pointed out that in regard to the mean wind speed and the average precipitation in January as well as the elevation, there are respective remarkable positive linear relations between the three factors and the thickness of ice accretion, and there exists a more obvious second-degree polynomial relation of the thickness of ice accretion with the three factors. The thickness of ice accretion of 96 weather stations in Shaanxi Province once in 5-decade is respectively calculated by the second-degree polynomial relations of the thickness of ice accretion with the three factors; then the average value of the calculation results of each weather station is regarded as the final thickness of ice accretion of each weather station; finally, according to the average thickness of ice accretion of 96 weather stations, the regional division of ice zone in Shaanxi Province is implemented.

Keywords:

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