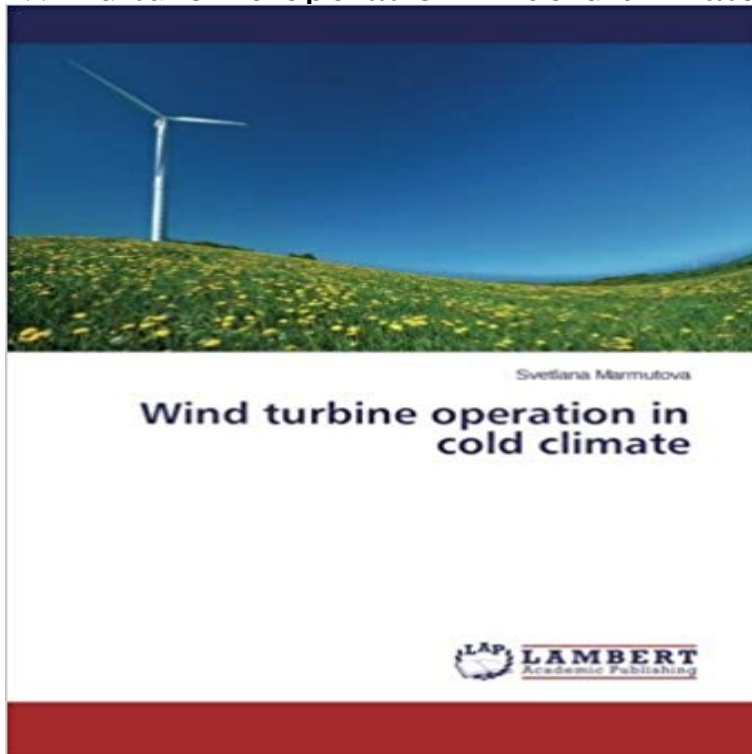


Wind turbine operation in cold climate



The goals of this work are to determine and estimate the influence of the ice accretion on the performance of the wind turbine blade. The techniques are described of the calculation of the ice accretion on the turbine blade. The aerodynamic characteristics of the blade with ice are determined. The methodology of the classic Blade Element Moment Theory was applied. The experimental data of the iced blade were investigated in order to calculate the characteristics of the blade with ice. The obtained results show that the power coefficient of the blade with ice on the surface is lower than the power coefficient of the clean blade. The implementation of the heating system is efficient in the particular site in the Lapland region.

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