

# On line Monitoring of Icing thickness on Transmission Line with Interval Estimation Method based on Tension Backstepping and Image Detecting

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This paper presents a new scheme for the on line monitoring of icing thickness on transmission line. This scheme combines the tension backstepping method and image detecting method, regards the results calculated by two former methods as samples meeting normal distribution ,and obtains the confidence interval of mathematical expectation of icing thickness based on interval estimation. This paper discusses the mathematical methods of backstepping and calculating of icing thickness by the tension backstepping method and the image detecting method respectively and the calculation method of confidence interval of mathematical expectation of icing thickness; It also gives the scheme for the on line monitoring system of icing thickness on transmission line and introduces the system hardware as well as software designs.