

Title:**Non-Destructive Testing and Reliability Solutions for Utility Overhead Lines
by****Dr. Jalal Kia
Reliable Lines**

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Room NA 1.418, GTP building (Ground Floor),
Deakin University, Waurin Ponds, Geelong, Australia

RSVP – <http://www.deakin.edu.au/research/cisr/workshops/ieee-smc-vic.php>

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Abstract

Electrical utility and telecommunication industries have been searching for new solutions to the problem of assessing the condition of aging wooden poles. The majority of suggested solutions use a variation of non-destructive testing (NDT) technology. In this presentation, we introduce three separate technologies capable of assessing the remaining strength of wooden poles. The methods used in these devices are Time of Flight using Electro-Mechanical Acoustic Pulse, Radar Beam using Ground Penetrating Radar technology and Impulse Excitation Technique by measuring natural frequencies of the pole. Asset managers are increasingly recognising the importance of calculating the effect of extreme wind loads on overhead lines in addition to finding out the remaining strength of the poles. In this regard, we review a probabilistic load calculation method by introducing an engineering Reliability Based Design approach that ensures the overhead line structure has enough strength to withstand the extreme wind loads.

Biography:

Dr Jalal Kia completed his BSc in Electronics and MSc in Computer Science from Sharif University of Technology in Tehran and his PhD in Artificial Neural Networks in University of Auckland in 1993. Since then he has been involved in research and development for dairy, forestry, printing and utility power industries in the fields of Computational Intelligence, Automation, Reliability and Software Engineering. Currently, he is the CEO, founder and director of various companies including Reliable Lines that specialize in providing software, pole testing technologies, engineering and reliability solutions for utility power industry. He has developed WoodScan, PoleScan, Pole Tester and Pole Designer mobile application products. His software applications have been used in various countries to assess the condition of tens of thousands utility poles and engineering design of overhead lines.