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Improving sound propagation modeling for wind power projects

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Sound propagation from wind power projects can be modeled in the same manner as other more common outdoor noise sources, but are these models suited to wind turbines' uniquely high source heights, operating under high wind conditions, and various degrees of terrain ruggedness. In "Propagation Modeling Parameters for Wind Turbines" (K. Kaliski and E. Duncan, Proceedings of Institute of Noise Control Engineers NOISECON 2007), the effects of ground attenuation and various adjustments for wind conditions on sound propagation modeling were discussed. This paper continues the discussion and explores the accuracy of existing sound propagation modeling methods for wind power projects including ISO 9613 and other standards. Model data for wind power projects and the implications of various terrain and ground coverage will be discussed.