

2.29 AN OVERVIEW OF THE SHONAI AREA RAILROAD WEATHER PROJECT

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On Japan railroads, wind conditions affect operating efficiency, infrastructure, and safe passage of people and freight. For instance, strong and gusty winds cause regional delays or shutdowns, and especially hazardous crosswinds may lead to overturn of railcars. Since propeller-vane/cup anemometers densely cover on the railroads for operations through some wind speed thresholds (e.g., winds in excess of 25 ms^{-1}), small-scale but strong gusty winds are difficult to detect with the present system. The Shonai area railroad weather project will investigate fine-scale structure of wind gust dynamics and kinetics such as tornadoes, downbursts, and gustfronts.

The goal of the project is to develop an automatic strong gust detection system for railroads, which the decision to warn is generally based upon information from a single-Doppler radar at low elevation angles. In this presentation, we will introduce an overview of the project as well as highlights from the our recent results will be presented.