

**Experimental Studies on the Applicability of Sprinkler Snow-melting Method
to Shinkansen Lines in Cold and Heavy-snow Regions**

Shigehiro IIKURA Mamoru NOGUCHI Hitoshi KOBAYASHI

Tetsuo KIKUCHI Katsuhisa KAWASHIMA Toshishige FUJII

To ensure reliable transport of bullet trains in winter, we studied a snow-melting method as a measure against snowfall for the extended section of Tohoku Shinkansen line under severe weather conditions. For this purpose, we constructed a real-size viaduct in the Aomori prefecture and carried out snow melting tests. Through the tests, we demonstrated that the snow fallen onto the viaduct was completely melted by sprinkled water even when air temperature is below 0 °C and obtained a formula to determine the water temperature needed to melt snow under various severe conditions.