Estimation Method for Snow Accretion Amount on Shinkansen Bogies using Weather Information along the Railway Lines

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Shinkansen trains operating in snowy areas have snow accretions on their bogies by which ground facilities are occasionally damaged. To prevent such damage, snow removing operations are performed at stations. We developed a method to estimate the snow accretion amount in the following order: estimation of snow properties on the railway track based on weather information, estimation of amount of flying up snow, and prediction of the snow accretion amount based on the amount of flying snow. We confirmed that the amount of the snow accretion upon arrival at the station can be estimated within an error of 3cm.