

Analysis of wind vulnerability and proposal of measures for wind-resistance performance improvement of house stock in Japan

*Kazuyoshi Nishijima¹

1. Disaster Prevention Research Institute, Kyoto University

Whereas building construction technology has been remarkably advanced in Japan since mid 20th century, wind-induced damages to houses are still significant. In fact, Typhoons Jebi (2018) and Faxai (2019) caused huge amount of damages in Osaka and Chiba areas respectively. This presentation starts with recognizing the fact that higher damage rate is observed for houses built many years ago, which is reconfirmed by damage surveys after the two recent typhoons. It proposes measures for improving wind-resistant performance of house stock as a whole in Japan. The proposed measures are, not focusing on houses built in the future, but focusing on existing houses. The underlying idea is to make upgraded repair for the entire part of damaged component, such as roof, with more wind-resistant one. This presentation investigates feasibility of the proposed measures by showing the result of the cost and benefit analysis by simulation as well as looking at challenges in practice.

Keywords: Disaster mitigation, Damage survey, cost and benefit, House stock