

## Basic Data Construction for a Typhoon Disaster Prevention Model : Analysis According to the Typhoon Path Type

\*HANA NA<sup>1</sup>, Woo-Sik JUNG<sup>1</sup>

1. Department of Atmospheric Environment Information Engineering, Atmospheric Environment Information Research Center, Inje University, Gimhae 50834, Korea

In this study, a typhoon disaster prevention model was used to estimate the maximum wind speed during typhoon period by path type from all typhoons that affected the Korean Peninsula from 2002 to 2015. For the typhoon information and upper wind information used as input data, the results of the WRF numerical model, which utilized the Best Track data of the RSMC Tokyo Typhoon Center and the RDAPS data of the Korea Meteorological Administration, were applied. From analyzing the path type impact frequency using all typhoons that affected the Korean Peninsula during the study period (2002–2015), Type 7 that affected the Korean Peninsula through Japan was the most frequent, followed by Type 2 that directly landed on the Korean Peninsula through the southern coast. From analyzing the monthly path types of the typhoons that affected the Korean Peninsula, Type 2 that affected the Korean Peninsula by landing on the southern coast and Type 7 that affected the Korean Peninsula through Japan were the most frequent for the recently increasing September typhoons. The analysis of the maximum wind speed of the 3-second gust that may occur during typhoon period by path type revealed that Type 2 that affected the Korean Peninsula by landing on the southern coast exhibited the highest 3-second gust. As a result of examining the distribution of Type 2, high 3-second gusts occurred throughout the Korean Peninsula, including the southeast coast. As for the path of Type 2 that directly affected the Korean Peninsula by landing on the southern coast, the occurrence frequency was the second highest during the entire study period and the value of the 3-second gust, which was the maximum wind speed that may occur during typhoon period, was the highest.

This research was supported by Basic Science Research Program through the National Research Foundation of Korea(NRF) funded by the Ministry of Education(2017R1D1A3B03036152)

Keywords: Typhoon Path, 3-Second gust, Typhoon Disaster Prevention Model

## Basic Data Construction for a Typhoon Disaster Prevention Model : Analysis According to the Typhoon Path Type

Hana Na, Woo-Sik Jung

In this study, a typhoon disaster prevention model was used to estimate the maximum wind speed during typhoon period by path type from all typhoons that affected the Korean Peninsula from 2002 to 2015. For the typhoon information and upper wind information used as input data, the results of the WRF numerical model, which utilized the Best Track data of the RSMC Tokyo Typhoon Center and the RDAPS data of the Korea Meteorological Administration, were applied. From analyzing the path type impact frequency using all typhoons that affected the Korean Peninsula during the study period (2002–2015), Type 7 that affected the Korean Peninsula through Japan was the most frequent, followed by Type 2 that directly landed on the Korean Peninsula through the southern coast. From analyzing the monthly path types of the typhoons that affected the Korean Peninsula, Type 2 that affected the Korean Peninsula by landing on the southern coast and Type 7 that affected the Korean Peninsula through Japan were the most frequent for the recently increasing September typhoons. The analysis of the maximum wind speed of the 3-second gust that may occur during typhoon period by path type revealed that Type 2 that affected the Korean Peninsula by landing on the southern coast exhibited the highest 3-second gust. As a result of examining the distribution of Type 2, high 3-second gusts occurred throughout the Korean Peninsula, including the southeast coast. As for the path of Type 2 that directly affected the Korean Peninsula by landing on the southern coast, the occurrence frequency was the second highest during the entire study period and the value of the 3-second gust, which was the maximum wind speed that may occur during typhoon period, was the highest.

This research was supported by Basic Science Research Program through the National Research Foundation of Korea(NRF) funded by the Ministry of Education(2017R1D1A3B03036152).

Keywords : Typhoon Disaster Prevention Model, WRF, Typhoon Track, 3-Second gust