

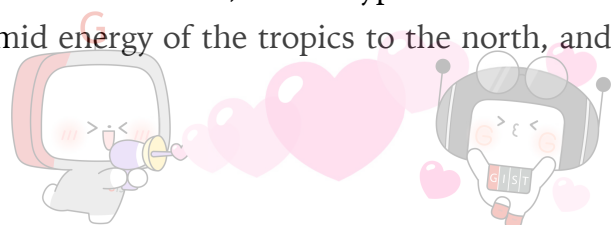
Gwangju Institute of Science and Technology

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Professor Jin-Ho Yoon's joint research team identifies link between three typhoons that affected the Korean Peninsula in the summer of 2020 and wildfires in the western United States

- GIST (Gwangju Institute of Science and Technology, President Kiseon Kim) School of Earth Sciences and Environmental Engineering Professor Jin-Ho Yoon's research team confirmed that three typhoons, which caused much damage to the Korean Peninsula in the summer of 2020, affected forest fires in the western U.S. state of Oregon by changing jet streams with strong energy.
- The typhoon affected the Korean Peninsula for two weeks from late August to early September 2020 and caused a lot of damage as they progressed from south to north: ▲ Typhoon No. 8 (August 22) "BAVI" ▲ Typhoon No. 9 (August 28) "MAYSAK" ▲ Typhoon No. 10 (September 1) "HAISHEN."
- A total of 23 typhoons occurred in 2020, of which 4 affected Korea. This is similar to 3.1 in a normal year, but they occurred intensively in August. In particular, the three typhoons excluding the fifth typhoon "JANGMI" reached a maximum instantaneous wind speed of 49.2m/s (Gosan, Jeju, Maysak) over two weeks. They were accompanied by strong winds and heavy precipitation, causing great damage to the Korean Peninsula. In addition, these typhoons traveled north and propagated the hot and humid energy of the tropics to the north, and



this powerful energy was strong enough to change the jet stream. This was linked to a forest fire in Oregon by creating a powerful high-pressure system on the western coast of the United States.

- The research team inferred this conclusion by comparing various observations, including the course of the 2020 typhoons, with experiments that predicted the typhoon using multiple ensemble prediction data (GEFS) and experiments that did not.
- Professor Jin-Ho Yoon said, "In an unusually short period of two weeks, three typhoons affected the Korean peninsula, causing a lot of damage. These were so powerful that it even created a weather pattern that caused wildfires in the United States. It is urgent to understand extreme weather as a global phenomenon rather than as a local phenomenon and to prepare plans to respond appropriately."
- This research was conducted by GIST School of Earth Sciences and Environmental Engineering Professor Jin-Ho Yoon with researchers from Utah State University and support from the Korea Meteorological Administration as an international climate research project. The results of the study were published online on December 8, 2020 in *Geophysical Research Letters*, an internationally renowned academic journal in the field of geoscience.

