

Convective systems causing heavy rainfall and severe wind damage in Japan in recent years

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In Japan, we have serious damage almost every year by larger-scale heavy rainfalls resulting from typhoons, the Baiu front and midlatitude cyclones. Local heavy rainfalls in less than several ten km² area during a few hours which come from one or a few thunderstorms also give us flash flooding, particularly in urban areas. Severe winds including tornado also give us pin-point heavy damage. They have been giving us many subjects in the fields of monitoring/forecasting, disaster prevention and information services.

First, the rainfall and severe wind damage which occurred in Japan during seven years from 2006 to 2012 are classified according to the atmospheric situation, characteristics of the heavy rainfalls and severe winds, scale and feature of the damage. Second, focusing on the convective systems and thunderstorms composing the systems which caused the heavy rainfalls and the severe winds, we examine our degree of comprehension about their behavior, types of convection and generation mechanisms of the heavy rainfalls and the severe winds. Finally, what kind of research should be extended and what issues should be solved will be discussed.

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