



HONG KONG : THE FACTS



Hong Kong Observatory

The Hong Kong Observatory is a government department responsible for monitoring and forecasting weather, as well as issuing warnings on weather-related hazards. The Observatory also monitors and assesses radiation levels in Hong Kong, and provides other meteorological and geophysical services to meet the needs of the public and the shipping, aviation, industrial and engineering sectors.

Weather Services: The Observatory provides weather services to the public, fishermen, shipping community, the aviation sector, as well as other special users. Through special arrangements, it also provides tailored meteorological support for major activities such as fireworks display and sporting events.

The Observatory operates a range of weather monitoring equipment, including a territory-wide network of automatic weather stations for measuring wind, pressure, temperature, humidity and rainfall, a network of cameras and visibility meters for providing real-time weather photos and visibility readings, a lightning location network for detecting lightning and two Doppler weather radars for detecting the intensity and movement of rain areas. The Observatory also exchanges real-time data with other meteorological centres worldwide and receives cloud pictures from a variety of weather satellites.

The Observatory uses computer models to simulate and predict the evolution of weather systems over East Asia and the western North Pacific. The model results form the basis for forecasting the weather in Hong Kong and the adjacent seas, as well as for providing the public with weather forecasts in fine spatial and temporal resolution. For local weather, apart from providing weather forecast up to 9 days ahead, the Observatory has also developed a one-stop-shop "Automatic Regional Weather Forecast" webpage to provide hourly weather forecast generated by computer models for various locations in Hong Kong and Pearl River Delta region up to 9 days ahead, as well as the rainfall nowcast for next two hours. To predict rapidly developing rainstorms, the Observatory is operating a nowcasting system called SWIRLS (Short-range Warning of Intense Rainstorms in Localized Systems). Using data from radars, raingauges and lightning sensors, together with the results of computer simulation, SWIRLS provides forecasts of rainstorms and its associated inclement weather over Hong Kong up to 6 hours ahead. In addition to supporting the weather forecast and warning operations, SWIRLS also provides public rainfall nowcast services through the Observatory's website and the mobile app 'MyObservatory'. The Observatory also cooperates with meteorological services

in the region on aspects such as nowcasting and numerical weather prediction technology.

Weather information, forecasts and warnings on hazardous weather for the public are delivered and broadcast through a variety of dissemination channels, including the Observatory's website (<http://www.weather.gov.hk/> and <http://www.hko.gov.hk/>), mobile app 'MyObservatory' which support iPhone, Android and Window Phone platforms, Windows desktop app 'Weather Wizard', the 187 8200 Dial-a-weather service, press, radio, TV, as well as YouTube, Twitter and Weibo and WeChat social-networking websites. The Observatory's website is also available with a personalized version (<http://my.weather.gov.hk/>) to facilitate user-customizable contents. The Observatory provides a free public television weather service, through which weather programmes, including a weekly educational feature named 'Cool Met Stuff' are broadcast on televisions, YouTube and the 'MyObservatory' mobile app. Radio interviews are also conducted by forecasters and weather service officers of the Observatory on the latest weather situation.

The Observatory provides meteorological services required by international air navigation to the Hong Kong International Airport (HKIA) and for the Hong Kong Flight Information Region through its Airport Meteorological Office. In particular, the Observatory operates a sophisticated network of weather sensors, including two terminal Doppler weather radars, two LIDAR (Light Detection And Ranging) systems and five weather buoys, as well as in-house developed meteorological systems for automatic alerting of windshear, turbulence, lightning and other severe weather at and in the vicinity of the HKIA. Weather information required by the aviation community, including the flight documentation required for departing flights from HKIA and significant convection forecast in support of air traffic flow management, is provided through a web-based Aviation Meteorological Information Dissemination System and a mobile application.

The Observatory promotes public awareness of and community preparedness on natural disasters by regularly conducting public talks, providing media interviews, organizing training courses as well as producing publicity materials on hazardous weather phenomena. Through the "Science in the Public Service" campaign, it also joins forces with other government bureaux/departments to enhance the public's understanding of the application of science and technology in the provision of public services. In addition, the Observatory employs a mascot, Dr. Tin, to promote public education activities.

Radiation Monitoring and Assessment: The Observatory monitors the ambient radiation levels in Hong Kong and conducts radiological measurements on samples of air, soil, water and food.

In the unlikely event of a nuclear emergency at the nuclear power stations in Guangdong, the Observatory will immediately step up radiation monitoring, assess the radiological consequences and provide technical advice to the government regarding the appropriate protective actions to take.

Time Standard, Geophysical and Climatological Services: The Observatory maintains a caesium beam atomic clock as the Hong Kong time standard. Time checking services are provided through network time service, Internet clocks (including web clock and palm clock), the Dial-a-weather System and local radio channels. The Observatory uses a high accuracy time transfer system based on global navigation satellite systems, such as the Global Positioning System to provide time information of its atomic clock to the International Bureau of Weights and Measures (BIPM) in France, thereby contributing to the determination of the co-ordinated universal time (UTC).

The Observatory operates a network of seismograph stations and collects real-time data from numerous seismograph stations around the world to monitor earthquake activities and to provide earthquake

information services, including the dissemination of Quick Earthquake Messages through Twitter, Weibo and RSS. It also issues warnings against tsunamis that may affect Hong Kong.

A network of tide gauges operated by the Observatory provides information on tides, mean sea levels, storm surges and tsunamis.

For climate services, the Observatory operates the "Climatological Information Services" webpage which provides public and users in different sectors with one-stop-shop online access to various climate information and statistics of Hong Kong, the latest climate news and educational resources on climate subjects. The Observatory also actively collaborates with stakeholders and partners to enhance the usage of climate information in different areas, including engineering projects, town planning, water resources management, scientific research, energy saving and disaster risk reduction.

The Observatory issues a prediction of the annual rainfall and the total number of tropical cyclones affecting Hong Kong in a year. It also issues seasonal forecasts of temperature and rainfall of Hong Kong via its website.

The Observatory conducts research on climate change in Hong Kong, as well as its impacts to the society. Outreach activities, including public and school talks, exhibitions, open days, etc. are conducted regularly to promote public understanding of the science of climate change.