

3.4 熱帶風暴電母(1608)：二零一六年八月十七日至二十日

電母是香港天文台在二零一六年第四個需要發出熱帶氣旋警告信號的熱帶氣旋。

一個熱帶低氣壓於八月十七日上午在香港之西南約220公里的南海北部上形成，當天其移動緩慢，強度卻漸增。該熱帶低氣壓翌日早上增強為熱帶風暴及被命名為電母。電母採取偏西路徑移動，於八月十八日下午在雷州半島登陸，當晚進入北部灣。電母在橫過北部灣期間再度發展，於八月十九日上午達到其最高強度，中心附近最高持續風速估計為每小時85公里。電母於當日下午在越南北部登陸，移入內陸並逐漸減弱，最後於八月二十日早上在緬甸北部減弱為一個低壓區。

香港天文台於八月十七日上午11時30分發出一號戒備信號，當時電母集結在香港之西南約220公里，也是電母最接近香港的時候。本港吹和緩至清勁偏東風，天文台總部於當日下午4時59分錄得最低瞬時海平面氣壓991.5百帕斯卡。由於電母移動緩慢及逐漸發展，晚間本地風力逐步增強，天文台於晚上10時15分發出三號強風信號，當時電母位於本港之西南約240公里。晚間本港普遍吹清勁至強風程度東南風，高地間中吹烈風。翌日早上電母逐步移離本港，本港風力逐漸減弱，天文台在上午11時15分改發一號戒備信號，取代三號強風信號，最後於當日下午1時15分取消所有熱帶氣旋警告信號。

電母影響香港期間，尖鼻咀錄得最高潮位(海圖基準面以上)3.15米，而大埔滘則錄得最大風暴潮(天文潮高度以上)0.37米。

在電母的外圍雨帶影響下，八月十七日及十八日本港多雲及有狂風驟雨。這兩天期間本港普遍錄得超過50毫米雨量，九龍東部、港島東部及沙田的雨量更超過100毫米。

電母並沒有在香港造成嚴重破壞。根據報章報導，受電母相關的暴雨影響，海南島多處地方出現水浸，約四萬人需要緊急疏散，海陸空交通受影響。電母吹襲越南期間，造成最少16人死亡，兩人失蹤及15人受傷。

表3.4.1 - 3.4.4 分別是電母影響香港期間各站錄得的最高風速、持續風力達到強風程度的時段、香港的日雨量及最高潮位資料。圖3.4.1 - 3.4.4 分別為電母的路徑圖、本港的雨量分佈圖、電母的衛星及雷達圖像。

3.4 Tropical Storm Dianmu (1608): 17 – 20 August 2016

Dianmu was the fourth tropical cyclone necessitating the issuance of tropical cyclone warning signal by the Hong Kong Observatory in 2016.

A tropical depression formed over the northern part of the South China Sea about 220 km southwest of Hong Kong on the morning of 17 August. It moved slowly and intensified gradually that day. The tropical depression intensified into a tropical storm and was named Dianmu the next morning. Moving generally westwards, Dianmu made landfall over Leizhou Peninsula on the afternoon of 18 August and entered Beibu Wan that night. It re-intensified as it moved across Beibu Wan, reaching its peak intensity with an estimated sustained wind of 85 km/h on the morning of 19 August. After making landfall over the northern part of Vietnam in the afternoon, Dianmu moved inland and weakened gradually. It finally degenerated into an area of low pressure over the northern part of Myanmar on the morning of 20 August.

The Standby Signal No. 1 was issued at 11:30 a.m. on 17 August when Dianmu was about 220 km southwest of Hong Kong. It was also closest to the territory at the time. Local winds were generally moderate to fresh from the east. At the Observatory Headquarters, the lowest instantaneous mean sea-level pressure of 991.5 hPa was recorded at 4:59 p.m. that day. With Dianmu moving slowly and developing gradually, local winds strengthened during the night, and the Strong Wind Signal No. 3 was issued at 10:15 p.m. when Dianmu was about 240 km southwest of Hong Kong. Local winds were generally fresh to strong from the southeast overnight, occasionally reaching gale force on high ground. As Dianmu moved further away from Hong Kong the next morning, local winds moderated gradually. The Strong Wind Signal No. 3 was replaced by the Standby Signal No. 1 at 11:15 a.m., before all tropical cyclone warning signals were cancelled at 1:15 p.m. that afternoon.

Under the influence of Dianmu, a maximum sea level (above chart datum) of 3.15 m was recorded at Tsim Bei Tsui, while a maximum storm surge of 0.37 m (above astronomical tide) was recorded at Tai Po Kau.

Under the influence of the outer rainbands of Dianmu, local weather was cloudy with squally showers on 17 and 18 August. More than 50 millimetres of rainfall were generally recorded over the territory during these two days, with rainfall amount exceeding 100 millimetres over the eastern part of Kowloon, the eastern part of Hong Kong Island and Shatin.

Dianmu did not cause any significant damage in Hong Kong. According to press reports, there were flooding in many places in Hainan Island due to rainstorms brought by Dianmu. Around 40 000 people were evacuated and transportation services were affected. In Vietnam, a least 16 persons were killed, two were missing and another 15 were injured during the passage of Dianmu.

Information on the maximum wind, period of strong winds, daily rainfall and maximum sea level reached in Hong Kong during the passage of Dianmu is given in Tables 3.4.1 - 3.4.4 respectively. Figures 3.4.1 - 3.4.4 show respectively the track of Dianmu, the rainfall distribution for Hong Kong, a satellite imagery and a related radar imagery of Dianmu.

表 3.4.1 在電母影響下，本港各站在熱帶氣旋警告信號生效時所錄得的最高陣風、最高每小時平均風速及風向
 Table 3.4.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations when tropical cyclone warning signals for Dianmu were in force

| 站 (參閱圖 1.1) Station (See Fig. 1.1) | | 最高陣風 Maximum Gust | | | | 最高每小時平均風速 Maximum Hourly Mean Wind | | | | | |
|---------------------------------------|---------------------------------|----------------------|---------------------------------|---------------------|------------|---------------------------------------|---------------------------------|---------------------|------------|------|-------|
| | | 風向 Direction | 風速 (公里/時) Speed (km/h) | 日期/月份 Date/Month | 時間 Time | 風向 Direction | 風速 (公里/時) Speed (km/h) | 日期/月份 Date/Month | 時間 Time | | |
| 黃麻角(赤柱) | Bluff Head (Stanley) | 東南偏南 | SSE | 62 | 18/8 | 02:26 | 東南偏南 | SSE | 38 | 18/8 | 04:00 |
| 中環碼頭 | Central Pier | 東南 | SE | 52 | 18/8 | 02:45 | 東 | E | 30 | 17/8 | 12:00 |
| 長洲 | Cheung Chau | 東南 | SE | 79 | 18/8 | 03:56 | 東南 | SE | 49 | 18/8 | 04:00 |
| 長洲泳灘 | Cheung Chau Beach | 東 | E | 56 | 17/8 | 23:35 | 東 | E | 38 | 17/8 | 23:00 |
| 青洲 | Green Island | 東南偏南 | SSE | 70 | 18/8 | 02:54 | 東北 | NE | 40 | 17/8 | 12:00 |
| 香港國際機場 | Hong Kong International Airport | 東南 | SE | 54 | 18/8 | 04:01 | 東南偏南 | SSE | 27 | 18/8 | 05:00 |
| 啟德 | Kai Tak | 東南偏東 | ESE | 62 | 18/8 | 07:03 | 東南偏東 | ESE | 30 | 18/8 | 04:00 |
| 京士柏 | King's Park | 東南 | SE | 49 | 18/8 | 06:58 | 東南偏東 | ESE | 19 | 18/8 | 07:00 |
| 流浮山 | Lau Fau Shan | 東北偏東 | ENE | 47 | 17/8 | 12:41 | 東北偏東 | ENE | 27 | 17/8 | 13:00 |
| | | 東北偏東 | ENE | 47 | 17/8 | 12:58 | | | | | |
| 昂坪 | Ngong Ping | 西南 | SW | 96 | 18/8 | 09:25 | 東 | E | 63 | 17/8 | 23:00 |
| 北角 | North Point | 東北偏東 | ENE | 41 | 17/8 | 12:16 | 東 | E | 30 | 17/8 | 12:00 |
| | | 東南偏東 | ESE | 41 | 18/8 | 02:55 | | | | | |
| 坪洲 | Peng Chau | 東 | E | 51 | 18/8 | 02:47 | 東 | E | 27 | 17/8 | 12:00 |
| | | 東南 | SE | 51 | 18/8 | 04:09 | | | | | |
| | | 東南偏東 | ESE | 51 | 18/8 | 07:07 | | | | | |
| 平洲 | Ping Chau | 東南 | SE | 31 | 18/8 | 02:59 | 東 | E | 6 | 17/8 | 12:00 |
| | | | | | | | 東南 | SE | 6 | 18/8 | 11:00 |
| 西貢 | Sai Kung | 東南偏南 | SSE | 62 | 18/8 | 02:31 | 東南偏南 | SSE | 30 | 18/8 | 08:00 |
| 沙洲 | Sha Chau | 東南 | SE | 51 | 18/8 | 03:33 | 東南 | SE | 34 | 18/8 | 04:00 |
| 沙螺灣 | Sha Lo Wan | 東 | E | 75 | 18/8 | 04:16 | 東 | E | 25 | 18/8 | 07:00 |
| 沙田 | Sha Tin | 東南偏南 | SSE | 54 | 18/8 | 02:56 | 東南 | SE | 16 | 18/8 | 05:00 |
| 石崗 | Shek Kong | 東北偏東 | ENE | 49 | 17/8 | 18:51 | 東 | E | 22 | 17/8 | 19:00 |
| 九龍天星碼頭 | Star Ferry (Kowloon) | 東 | E | 54 | 18/8 | 01:59 | 東 | E | 31 | 18/8 | 07:00 |
| 打鼓嶺 | Ta Kwu Ling | 東 | E | 43 | 18/8 | 02:49 | 東北偏東 | ENE | 14 | 18/8 | 03:00 |
| 大美督 | Tai Mei Tuk | 東南 | SE | 62 | 18/8 | 02:44 | 東 | E | 36 | 17/8 | 13:00 |
| 大帽山 | Tai Mo Shan | 東南 | SE | 104 | 18/8 | 03:45 | 東南 | SE | 68 | 18/8 | 04:00 |
| 大埔滘 | Tai Po Kau | 東南偏東 | ESE | 52 | 18/8 | 02:41 | 東南偏東 | ESE | 30 | 18/8 | 03:00 |
| 塔門 | Tap Mun | 東南 | SE | 65 | 18/8 | 02:52 | 東南 | SE | 30 | 18/8 | 06:00 |
| 大老山 | Tate's Cairn | 南 | S | 76 | 18/8 | 03:03 | 南 | S | 38 | 18/8 | 04:00 |
| | | 南 | S | 76 | 18/8 | 08:19 | | | | | |
| 將軍澳 | Tseung Kwan O | 東 | E | 63 | 18/8 | 02:31 | 東 | E | 13 | 18/8 | 02:00 |
| 青衣島蜆殼油庫 | Tsing Yi Shell Oil Depot | 東南偏東 | ESE | 43 | 18/8 | 02:57 | 東 | E | 20 | 18/8 | 08:00 |
| 屯門政府合署 | Tuen Mun Government Offices | 東南 | SE | 51 | 18/8 | 03:51 | 東南 | SE | 23 | 18/8 | 04:00 |
| 橫瀾島 | Waglan Island | 東南 | SE | 81 | 18/8 | 02:27 | 東南 | SE | 56 | 18/8 | 03:00 |
| 濕地公園 | Wetland Park | 東北偏東 | ENE | 38 | 17/8 | 12:34 | 東北偏東 | ENE | 16 | 17/8 | 13:00 |
| 黃竹坑 | Wong Chuk Hang | 東南 | SE | 52 | 18/8 | 06:42 | 東 | E | 22 | 18/8 | 04:00 |

表 3.4.2 在電母影響下，熱帶氣旋警告信號系統的八個參考測風站在熱帶氣旋警告信號生效時錄得持續風力達到強風程度的時段

Table 3.4.2 Periods during which sustained strong winds were attained at the eight reference anemometers in the tropical cyclone warning system when the tropical cyclone warning signals for Dianmu were in force

| 站 (參閱圖 1.1) Station (See Fig. 1.1) | | 最初達到強風*時間 Start time when strong wind speed* was attained | | 最後達到強風*時間 End time when strong wind speed* was attained | |
|---------------------------------------|-------------|---|------------|---|------------|
| | | 日期/月份 Date/Month | 時間 Time | 日期/月份 Date/Month | 時間 Time |
| 長洲 | Cheung Chau | 17/8 | 23:34 | 18/8 | 08:53 |
| 西貢 | Sai Kung | 18/8 | 02:39 | 18/8 | 02:40 |

香港國際機場、啟德、流浮山、沙田、打鼓嶺及青衣島蜆殼油庫的持續風力未達到強風程度。

The sustained wind speed did not attain strong force at Hong Kong International Airport, Kai Tak, Lau Fau Shan, Sha Tin, Ta Kwu Ling and Tsing Yi Shell Oil Depot.

* 十分鐘平均風速達每小時 41-62 公里

* 10-minute mean wind speed of 41- 62 km/h

註： 本表列出持續風力達到強風程度的起始及終結時間。期間風力可能高於或低於指定的風力。

Note: The table gives the start and end time of sustained strong winds. Winds might fluctuate above or below the specified wind speeds in between the times indicated.

表 3.4.3 電母影響香港期間，香港天文台總部及其他各站所錄得的日雨量
 Table 3.4.3 Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Dianmu

| 站 (參閱圖 3.4.2) Station (See Fig. 3.4.2) | | 八月十七日 17 Aug | 八月十八日 18 Aug | 總雨量(毫米) Total rainfall (mm) |
|---|----------------------------|-----------------|-----------------|--------------------------------|
| 香港天文台 Hong Kong Observatory | | 40.9 | 50.9 | 91.8 |
| 香港國際機場 Hong Kong International Airport (HKA) | | 26.8 | 34.0 | 60.8 |
| 長洲 Cheung Chau (CCH) | | 35.5 | 20.0 | 55.5 |
| H23 | 香港仔 Aberdeen | 37.5 | 30.5 | 68.0 |
| N05 | 粉嶺 Fanling | 15.0 | 46.5 | 61.5 |
| N13 | 糧船灣 High Island | 31.5 | 27.5 | 59.0 |
| K04 | 佐敦谷 Jordan Valley | 50.0 | 64.5 | 114.5 |
| N06 | 葵涌 Kwai Chung | 32.5 | 58.5 | 91.0 |
| H12 | 半山區 Mid Levels | 40.5 | 49.0 | 89.5 |
| N09 | 沙田 Sha Tin | 44.0 | 65.0 | 109.0 |
| H19 | 筲箕灣 Shau Kei Wan | 33.0 | 64.0 | 97.0 |
| SEK | 石崗 Shek Kong | [28.0] | [39.0] | [67.0] |
| K06 | 蘇屋邨 So Uk Estate | 27.0 | 69.0 | 96.0 |
| R31 | 大美督 Tai Mei Tuk | 12.0 | 43.0 | 55.0 |
| R21 | 踏石角 Tap Shek Kok | 18.0 | 29.0 | 47.0 |
| TMR | 屯門水庫 Tuen Mun Reservoir | 25.2 | 23.4 | 48.6 |
| N17 | 東涌 Tung Chung | 47.0 | 50.5 | 97.5 |

註：[] 基於不完整的每小時雨量數據。Note：[] based on incomplete hourly data.

表 3.4.4 電母影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮
 Table 3.4.4 Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Dianmu

| 站 (參閱圖 1.1) Station (See Fig. 1.1) | | 最高潮位 (海圖基準面以上) Maximum sea level (above chart datum) | | | 最大風暴潮 (天文潮高度以上) Maximum storm surge (above astronomical tide) | | |
|---------------------------------------|---------------|--|---------------------|------------|---|---------------------|------------|
| | | 高度(米) Height (m) | 日期/月份 Date/Month | 時間 Time | 高度(米) Height (m) | 日期/月份 Date/Month | 時間 Time |
| 鰂魚涌 | Quarry Bay | 2.54 | 18/8 | 08:05 | 0.25 | 18/8 | 07:09 |
| 石壁 | Shek Pik | 2.72 | 18/8 | 08:01 | 0.28 | 18/8 | 08:01 |
| 大廟灣 | Tai Miu Wan | 2.44 | 18/8 | 07:56 | 0.23 | 17/8 | 22:35 |
| 大埔滘 | Tai Po Kau | 2.43 | 18/8 | 08:19 | 0.37 | 17/8 | 12:07 |
| 尖鼻咀 | Tsim Bei Tsui | 3.15 | 18/8 | 09:36 | 0.31 | 18/8 | 09:36 |
| 橫瀾島 | Waglan Island | 2.52 | 18/8 | 07:31 | 0.14 | 18/8 | 07:31 |

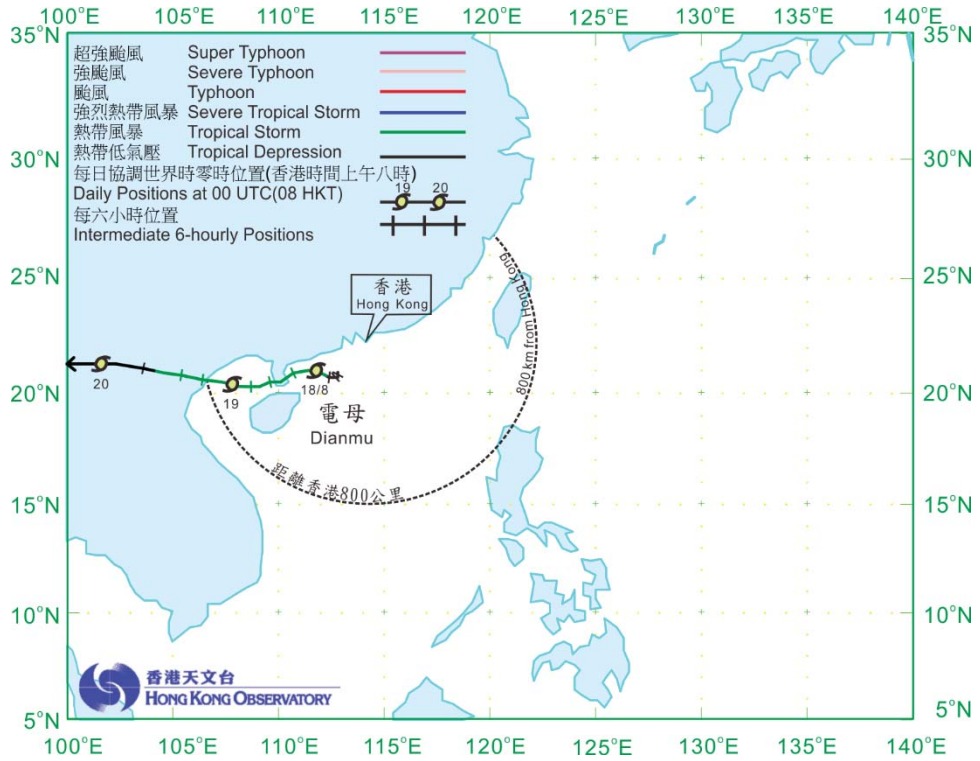


圖 3.4.1 二零一六年八月十七日至二十日電母(1608)的路徑圖。
 Figure 3.4.1 Track of Dianmu (1608) on 17 - 20 August 2016.

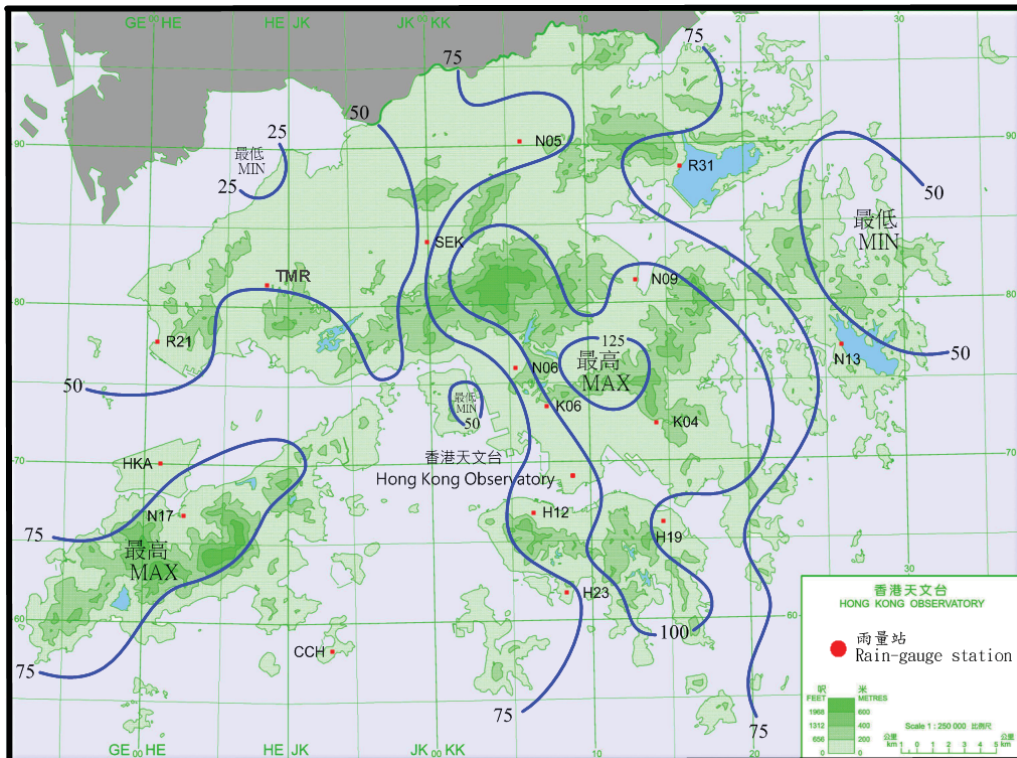


圖 3.4.2 二零一六年八月十七日至十八日的雨量分佈(等雨量線單位為毫米)。
 Figure 3.4.2 Rainfall distribution on 17 - 18 August 2016 (isohyets are in millimetres).

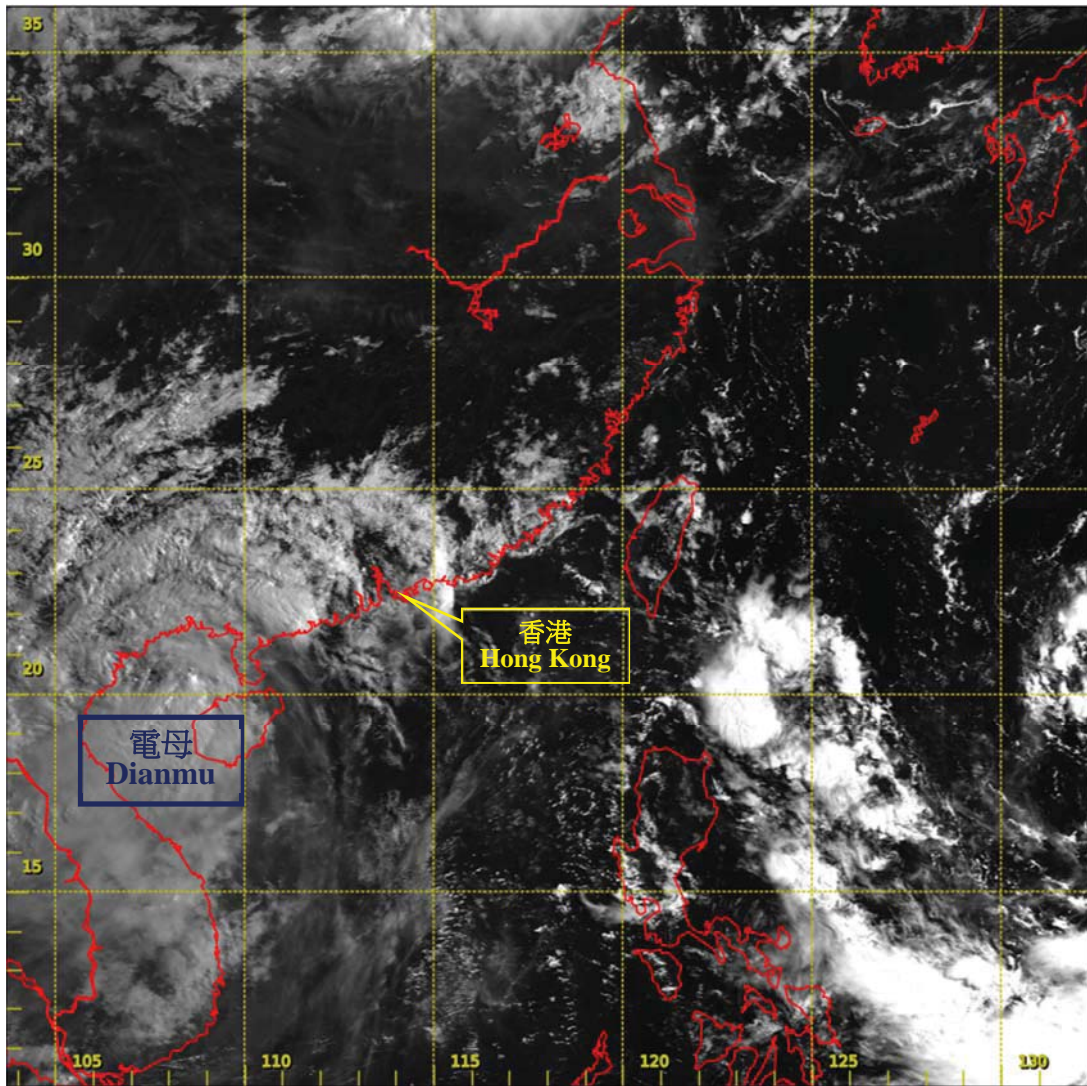


圖 3.4.3 二零一六年八月十九日上午 8 時左右的可見光衛星圖片，當時電母達到其最高強度，中心附近最高持續風速估計為每小時 85 公里。

Figure 3.4.3 Visible satellite imagery around 8 a.m. on 19 August 2016 when Dianmu was at its peak intensity with estimated maximum sustained winds of 85 km/h near its centre.

〔此衛星圖像接收自日本氣象廳的向日葵 8 號衛星。〕

[The satellite imagery was originally captured by Himawari-8 Satellite (H-8) of Japan Meteorological Agency (JMA).]

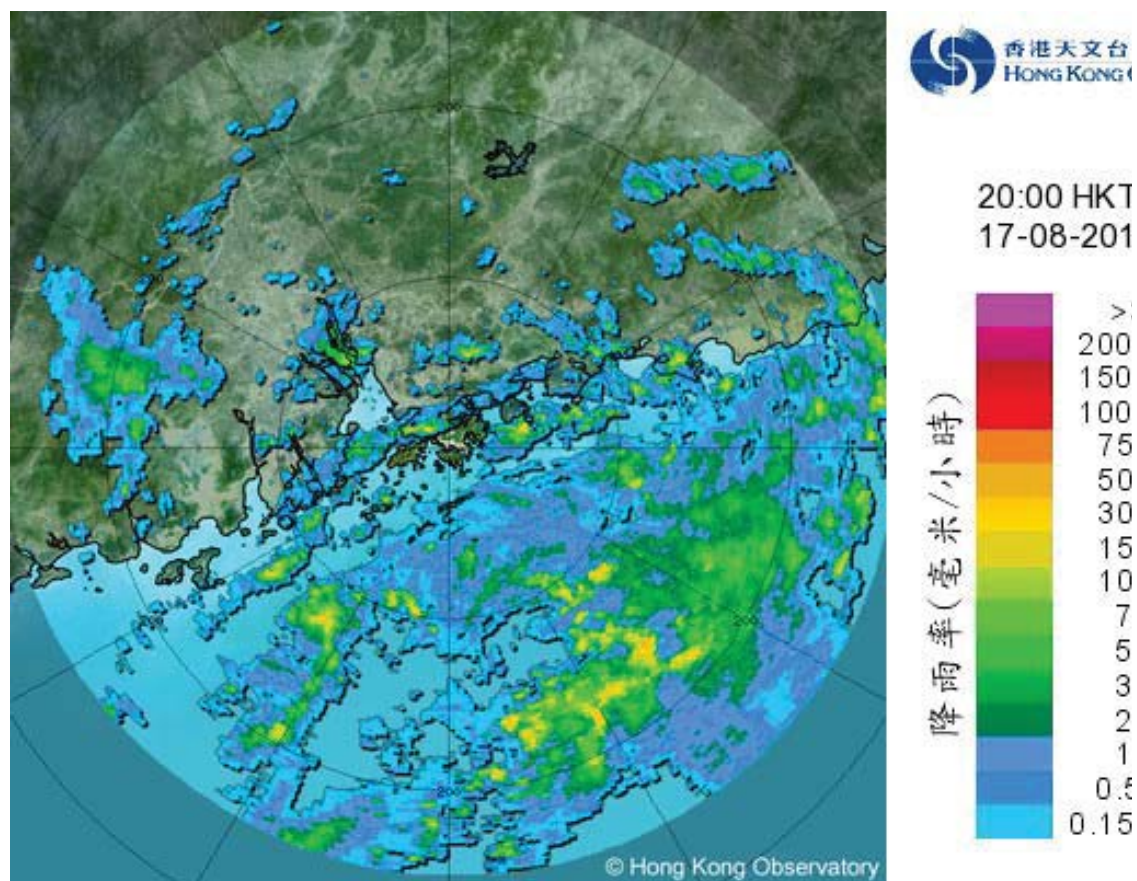


圖 3.4.4 二零一六年八月十七日晚上 8 時的雷達回波圖像，當時電母位於本港之西南約 230 公里。與電母相關的驟雨正影響廣東沿岸及南海北部。

Figure 3.4.4 Radar echoes captured at 8 p.m. on 17 August 2016, when the centre of Dianmu was located about 230 km southwest of Hong Kong. Showers associated with Dianmu were affecting the coast of Guangdong and the northern part of the South China Sea.