

### 3.2 熱帶風暴森拉克 (2003)：二零二零年七月三十一日至八月二日

森拉克是二零二零年第二個影響香港的熱帶氣旋。

一個季風低壓於七月三十日進入南海，並於七月三十一日晚上發展為熱帶低氣壓，大致向西北偏西移向海南島。該熱帶低氣壓在八月一日下午被命名為森拉克。翌日凌晨森拉克在北部灣增強為熱帶風暴及達到其最高強度，最高持續風速估計為每小時65公里。森拉克於八月二日早上在越南北部登陸，晚上在越南內陸減弱為低壓區。

天文台在七月三十一日上午7時05分發出強烈季候風信號。在副熱帶高壓脊及季風低壓的外圍環流共同影響下，當日香港普遍吹達強風程度的偏東風，離岸及高地間中吹烈風。隨著該季風低壓發展為熱帶低氣壓，天文台在七月三十一日晚上8時40分發出三號強風信號，取代強烈季候風信號，當時森拉克集結在香港之西南偏南約550公里。這是天文台歷來第六次於取消強烈季候風信號後直接改發三號強風信號，而對上一次是1993年的颱風黛蒂。七月三十一日晚上及翌日香港普遍吹達強風程度的東至東南風，離岸及高地間中吹烈風。隨著森拉克遠離本港，本港風力逐漸減弱，天文台在八月一日晚上9時10分以一號戒備信號取代三號強風信號，並於晚上11時15分取消所有熱帶氣旋警告信號。

在森拉克的影響下，尖鼻咀錄得最高潮位(海圖基準面以上) 2.91米，而大埔滘則錄得最大風暴潮(天文潮高度以上)0.54米。天文台總部於八月一日上午2時57分錄得最低瞬時海平面氣壓1003.0百帕斯卡。

受到森拉克相關的外圍雨帶影響，七月三十一日及八月一日本港間中有狂風大驟雨及雷暴，期間本港普遍錄得超過70毫米雨量。

森拉克吹襲香港期間，本港有多宗塌樹報告，多處有物件被吹倒。在尖沙咀，有樹木倒塌引致兩人受傷，另外有圍板被強風吹翻，導致兩輛私家車損毀及一人受傷。觀塘及將軍澳分別有帳篷及棚架被強風吹塌。薄扶林亦有膠圍欄被強風吹走，擊傷一名途人。

### 3.2 Tropical Storm Sinlaku (2003): 31 July to 2 August 2020

Sinlaku was the second tropical cyclone affecting Hong Kong in 2020.

A monsoon depression entered the South China Sea on 30 July and developed into a tropical depression the next night. The tropical depression generally tracked west-northwestward towards Hainan Island and was named Sinlaku on the afternoon of 1 August. Sinlaku intensified into a tropical storm over Beibu Wan in the small hours of the next day and reached its peak intensity with an estimated maximum sustained wind of 65 km/h. It made landfall over the northern part of Vietnam on the morning of 2 August and weakened into an area of low pressure over inland Vietnam that night.

The Strong Monsoon Signal was issued by the Hong Kong Observatory at 7:05 a.m. on 31 July. Under the combined effect of the subtropical ridge and outer circulation of the monsoon depression, local winds were generally strong easterlies with occasionally gales offshore and on high ground on that day. With the monsoon depression developing into a tropical depression, the Strong Wind Signal No. 3 was issued to replace the Strong Monsoon Signal at 8:40 p.m. on 31 July when Sinlaku was about 550 km south-southwest of Hong Kong. This was the sixth time on record that the Strong Wind Signal No. 3 was issued directly to replace the Strong Monsoon Signal. The last time it happened was in 1993 due to Typhoon Dot. Local winds were generally strong east to southeasterlies on the night of 31 July and during the day on 1 August with occasionally gales offshore and on high ground. With Sinlaku moving further away from Hong Kong, local winds subsided gradually and the Strong Wind Signal No. 3 was replaced by the Standby Signal No.1 at 9:10 p.m. on 1 August. All tropical cyclone warning signals were cancelled at 11:15 p.m. at night.

Under the influence of Sinlaku, a maximum sea level (above chart datum) of 2.91 m and a maximum storm surge of 0.54 m (above astronomical tide) were recorded at Tsim Bei Tsui and Tai Po Kau respectively. At the Observatory Headquarters, the lowest instantaneous mean sea-level pressure of 1003.0 hPa was recorded at 2:57 a.m. on 1 August.

Affected by the outer rainbands of Sinlaku, there were occasional squally heavy showers and thunderstorms on 31 July and 1 August. More than 70 millimetres of rainfall were generally recorded in Hong Kong during these two days.

There were a number of reports of fallen trees in Hong Kong during the passage of Sinlaku. Incidents of blowing down objects were also reported in many places. In Tsim Sha Tsui, two people were injured by a fallen tree while hoarding boards toppled by strong winds also caused one person injured and two vehicles damaged. A canopy in Kwun Tong and scaffolding in Tseung Kwan O collapsed under high winds. In Pok Fu Lam, some plastic fences were blown away and wounded a passer-by.

表 3.2.1 在森拉克影響下，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 3.2.1 Maximum gust peak speeds and maximum hourly mean winds with associated wind directions recorded at various stations when tropical cyclone warning signals for Sinlaku 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	SE	78	31/7	21:46	東南偏東	ESE	44	1/8	08:00
中環碼頭	Central Pier	東	E	71	1/8	04:49	東南偏東	ESE	35	1/8	11:00
長洲	Cheung Chau	東南	SE	109	31/7	23:24	東南偏東	ESE	64	1/8	08:00
長洲泳灘	Cheung Chau Beach	東南偏東	ESE	103	1/8	14:46	東	E	59	1/8	08:00
青洲	Green Island	南	S	88	1/8	14:59	東北偏東	ENE	39	1/8	04:00
香港國際機場	Hong Kong International Airport	東	E	78	1/8	12:47	東南偏東	ESE	37	1/8	13:00
啟德	Kai Tak	東南偏東	ESE	86	31/7	23:32	東	E	32	1/8	00:00
京士柏	King's Park	東南偏東	ESE	89	1/8	03:03	東南偏東	ESE	32	1/8	08:00
南丫島	Lamma Island	東南偏東	ESE	71	1/8	12:27	東南偏東	ESE	35	1/8	13:00
		東南偏東	ESE	71	1/8	12:29					
流浮山	Lau Fau Shan	東南	SE	60	1/8	15:25	東南偏東	ESE	23	1/8	16:00
北角	North Point	東	E	65	31/7	22:11	東	E	37	31/7	23:00
坪洲	Peng Chau	南	S	76	1/8	14:58	東	E	40	1/8	07:00
平洲	Ping Chau	東南	SE	39	1/8	15:18	東	E	12	1/8	04:00
西貢	Sai Kung	東南偏南	SSE	85	31/7	23:34	東南偏南	SSE	38	1/8	16:00
沙洲	Sha Chau	東南	SE	77	1/8	15:06	東南	SE	37	1/8	16:00
沙螺灣	Sha Lo Wan	東南偏東	ESE	77	1/8	07:52	東	E	29	1/8	08:00
沙田	Sha Tin	東北	NE	54	31/7	22:14	東南偏南	SSE	16	1/8	16:00
							東南	SE	16	1/8	18:00
九龍天星碼頭	Star Ferry (Kowloon)	東南偏東	ESE	76	1/8	08:46	東	E	39	1/8	09:00
打鼓嶺	Ta Kwu Ling	東南偏東	ESE	62	1/8	10:35	東	E	21	1/8	11:00
							東	E	21	1/8	13:00
大美督	Tai Mei Tuk	東北偏東	ENE	92	1/8	01:50	東	E	55	1/8	08:00
大帽山	Tai Mo Shan	東南偏東	ESE	125	31/7	23:54	東南偏東	ESE	79	1/8	08:00
大埔滘	Tai Po Kau	東南偏東	ESE	79	1/8	07:51	東南偏東	ESE	39	1/8	08:00
塔門東	Tap Mun East	東南	SE	87	1/8	01:37	東南偏東	ESE	53	1/8	08:00
大老山	Tate's Cairn	東南偏東	ESE	96	1/8	12:03	東南偏東	ESE	60	31/7	23:00
將軍澳	Tseung Kwan O	東南偏南	SSE	55	1/8	14:59	東南偏東	ESE	14	1/8	10:00
青衣島蜆殼油庫	Tsing Yi Shell Oil Depot	東	E	64	31/7	23:25	東南偏東	ESE	23	31/7	23:00
		東	E	64	31/7	23:26					
屯門政府合署	Tuen Mun Government Offices	東南偏南	SSE	61	1/8	15:09	東南	SE	23	1/8	16:00
橫瀾島	Waglan Island	東南	SE	85	1/8	15:03	東	E	55	31/7	23:00
							東	E	55	1/8	05:00
濕地公園	Wetland Park	東	E	42	1/8	06:22	東	E	17	1/8	09:00
黃竹坑	Wong Chuk Hang	東	E	71	1/8	12:17	東北偏東	ENE	24	1/8	08:00

昂坪、石崗 - 沒有資料 Ngong Ping, Shek Kong - data not available

表 3.2.2 在森拉克影響下，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 3.2.2 Periods during which sustained strong winds were attained at the eight reference anemometers in the tropical cyclone warning system when tropical cyclone warning signals for Sinlaku were in force

站 (參閱圖 1.1) Station (See Fig. 1.1)		最初達到強風*時間		最後達到強風*時間	
		Start time when strong wind speed* was attained		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	31/7	20:40	1/8	22:54
香港國際機場	Hong Kong International Airport	1/8	08:05	1/8	15:08
啟德	Kai Tak	31/7	23:36	1/8	15:26
西貢	Sai Kung	31/7	23:36	1/8	15:31

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 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 3.2.3 森拉克影響香港期間，香港天文台總部及其他各站所錄得的日雨量  
Table 3.2.3 Daily rainfall amounts recorded at the Hong Kong Observatory Headquarters and other stations during the passage of Sinlaku

站 (參閱圖 3.2.2) Station (See Fig. 3.2.2)			七月三十一日 31 Jul	八月一日 1 Aug	總雨量(毫米) Total rainfall (mm)
香港天文台 Hong Kong Observatory (HKO)			36.6	28.3	64.9
香港國際機場 Hong Kong International Airport (HKA)			33.1	28.6	61.7
長洲 Cheung Chau (CCH)			52.5	17.5	70.0
H23	香港仔	Aberdeen	70.0	16.5	86.5
N05	粉嶺	Fanling	28.0	68.5	96.5
N13	糧船灣	High Island	40.0	36.0	76.0
K04	佐敦谷	Jordan Valley	35.5	49.0	84.5
N06	葵涌	Kwai Chung	30.5	46.0	76.5
H12	半山區	Mid Levels	35.5	29.0	64.5
SHA	沙田	Sha Tin	57.0	43.0	100.0
H19	筲箕灣	Shau Kei Wan	51.0	28.5	79.5
SEK	石崗	Shek Kong	[32.5]	39.5	[72.0]
K06	蘇屋邨	So Uk Estate	34.5	43.0	77.5
R31	大美督	Tai Mei Tuk	19.0	42.5	61.5
R21	踏石角	Tap Shek Kok	42.5	45.5	88.0
N17	東涌	Tung Chung	48.0	43.5	91.5
TMR	屯門水庫	Tuen Mun Reservoir	10.6	33.8	44.4

註： [ ] 基於不完整的每小時雨量數據。

Note: [ ] based on incomplete hourly data.

表 3.2.4 森拉克影響香港期間，香港各潮汐站所錄得的最高潮位及最大風暴潮  
Table 3.2.4 Times and heights of the maximum sea level and the maximum storm surge recorded at tide stations in Hong Kong during the passage of Sinlaku

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	2.51	1/8	07:40	0.35	31/7	20:54
石壁	Shek Pik	2.71	1/8	07:36	0.36	1/8	07:37
大廟灣	Tai Miu Wan	2.58	1/8	07:28	0.47	31/7	21:25
大埔滘	Tai Po Kau	2.60	1/8	08:57	0.54	31/7	22:07
尖鼻咀	Tsim Bei Tsui	2.91	1/8	07:21	0.40	1/8	00:49

橫瀾島 - 沒有資料 Waglan Island - data not available

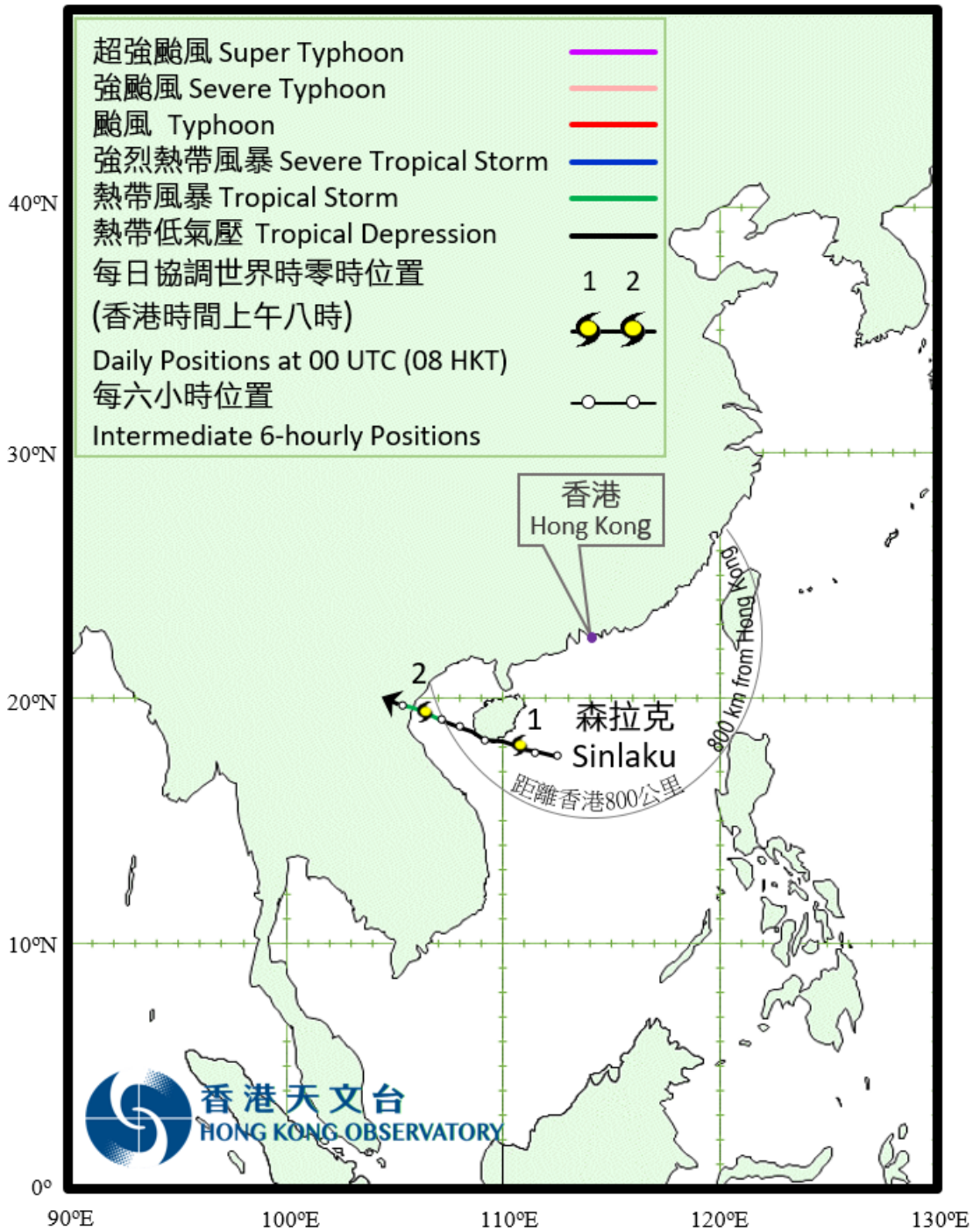


圖 3.2.1 二零二零年七月三十一日至八月二日森拉克的路徑圖。

Figure 3.2.1 Track of Sinlaku : 31 July – 2 August 2020.



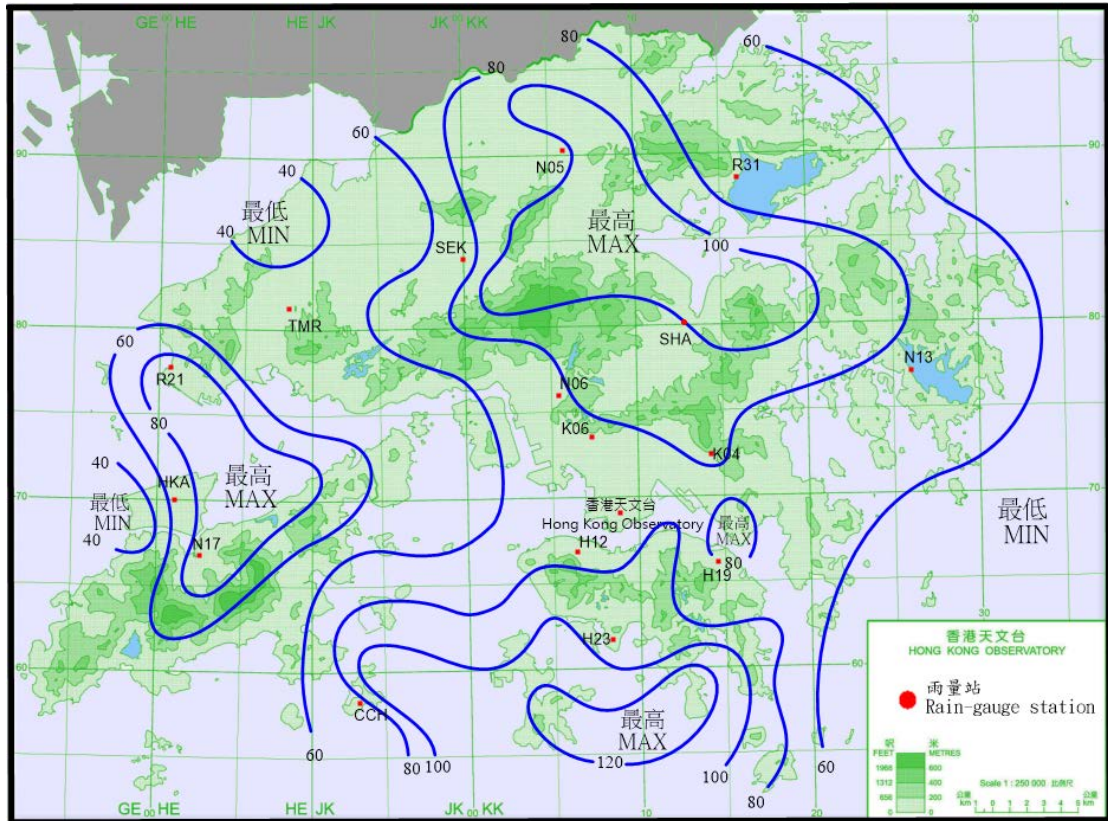


圖 3.2.2 二零二零年七月三十一日至八月一日的雨量分佈  
(等雨量線單位為毫米)。

Figure 3.2.2 Rainfall distribution on 31 July - 1 August 2020  
(isohyets in millimetres).

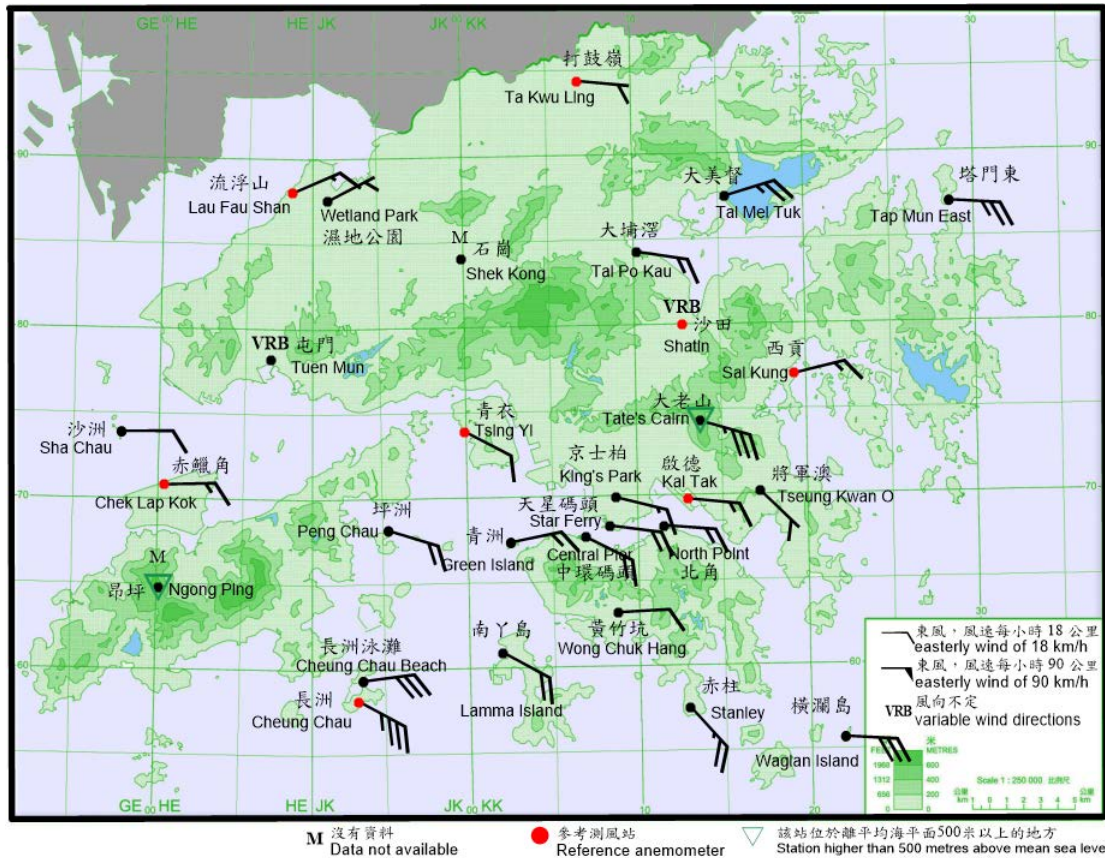


圖 3.2.3 二零二零年七月三十一日下午11時30分香港各站錄得的十分鐘平均風向和風速。當時塔門東、大老山、長洲泳灘、大美督及橫瀾島的風力達到強風程度。長洲的風力達到烈風程度。

Figure 3.2.3 10-minute mean wind direction and speed recorded at various stations in Hong Kong at 11:30 p.m. on 31 July 2020. Winds reached strong force at Tap Mun East, Tate's Cairn, Cheung Chau Beach, Tai Mei Tuk and Waglan Island at that time. Winds reached gale force at Cheung Chau.

註： 沙田及屯門當時錄得的十分鐘平均風速分別為每小時8及7公里。

Note: The 10-minute mean wind speeds recorded at Sha Tin and Tun Mun were 8 km/h and 7 km/h respectively at the time.



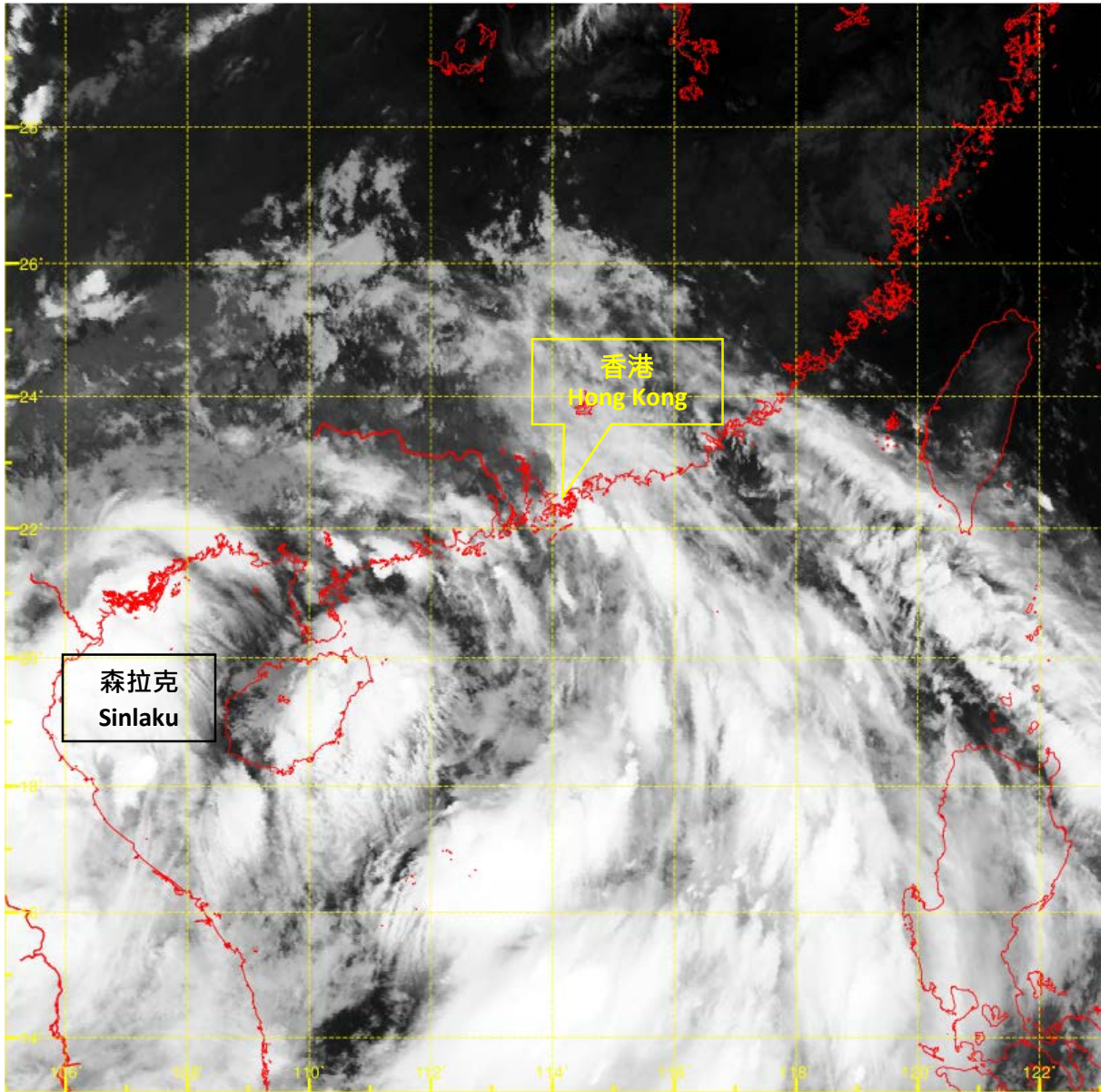


圖 3.2.4 二零二零年八月二日上午2時左右的紅外線衛星圖片，當時森拉克達到其最高強度，中心附近最高持續風速估計為每小時65公里。

Figure 3.2.4 Infra-red satellite imagery around 2 a.m. on 2 August 2020, when Sinlaku was at its peak intensity with an estimated sustained wind of 65 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).]

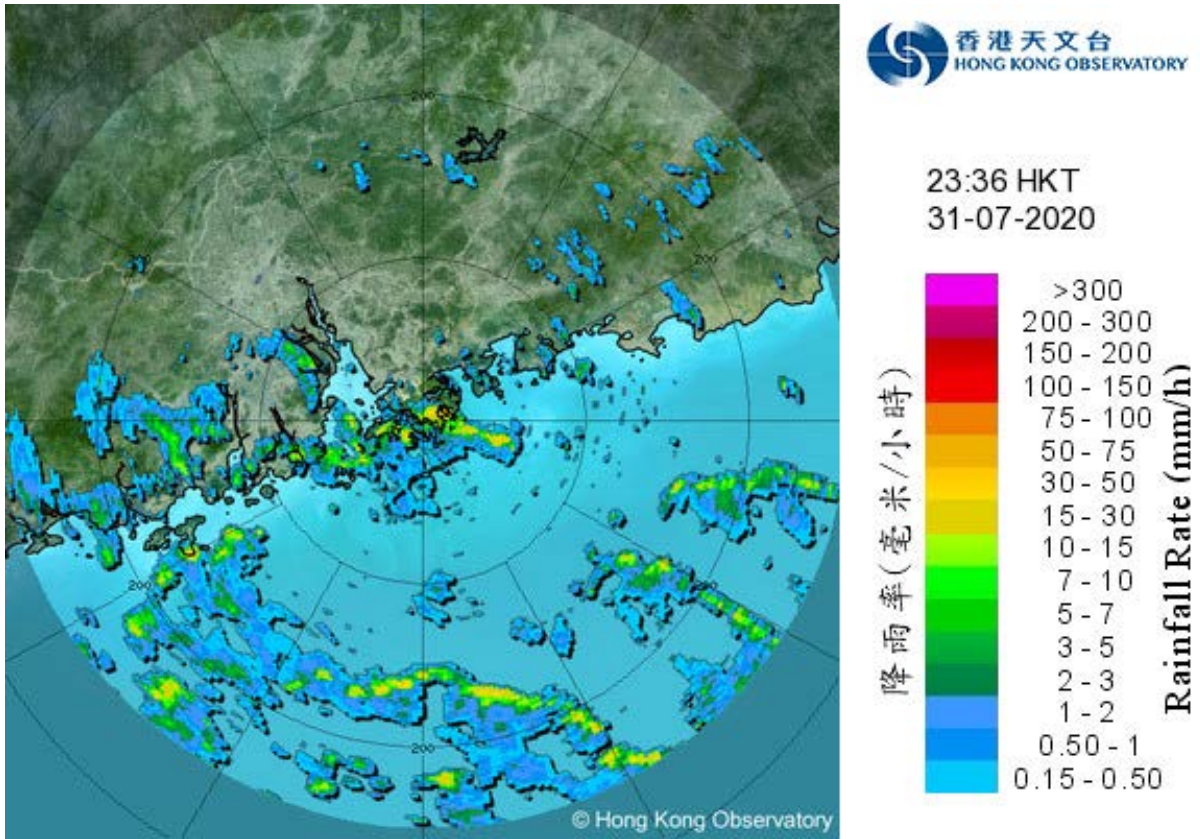


圖 3.2.5 二零二零年七月三十一日晚上11時36分的雷達回波圖像，當時與森拉克相關的外圍雨帶正影響香港。

Figure 3.2.5 Image of radar echoes at 11:36 p.m. on 31 July 2020. The outer rainbands associated with Sinlaku were affecting Hong Kong at that time.