

## Supplementary Material

**Table S1.** Performance figures (processing time) for various SNAPPING jobs, executed using different AOI extents, percentage of land coverage and processing parameters.

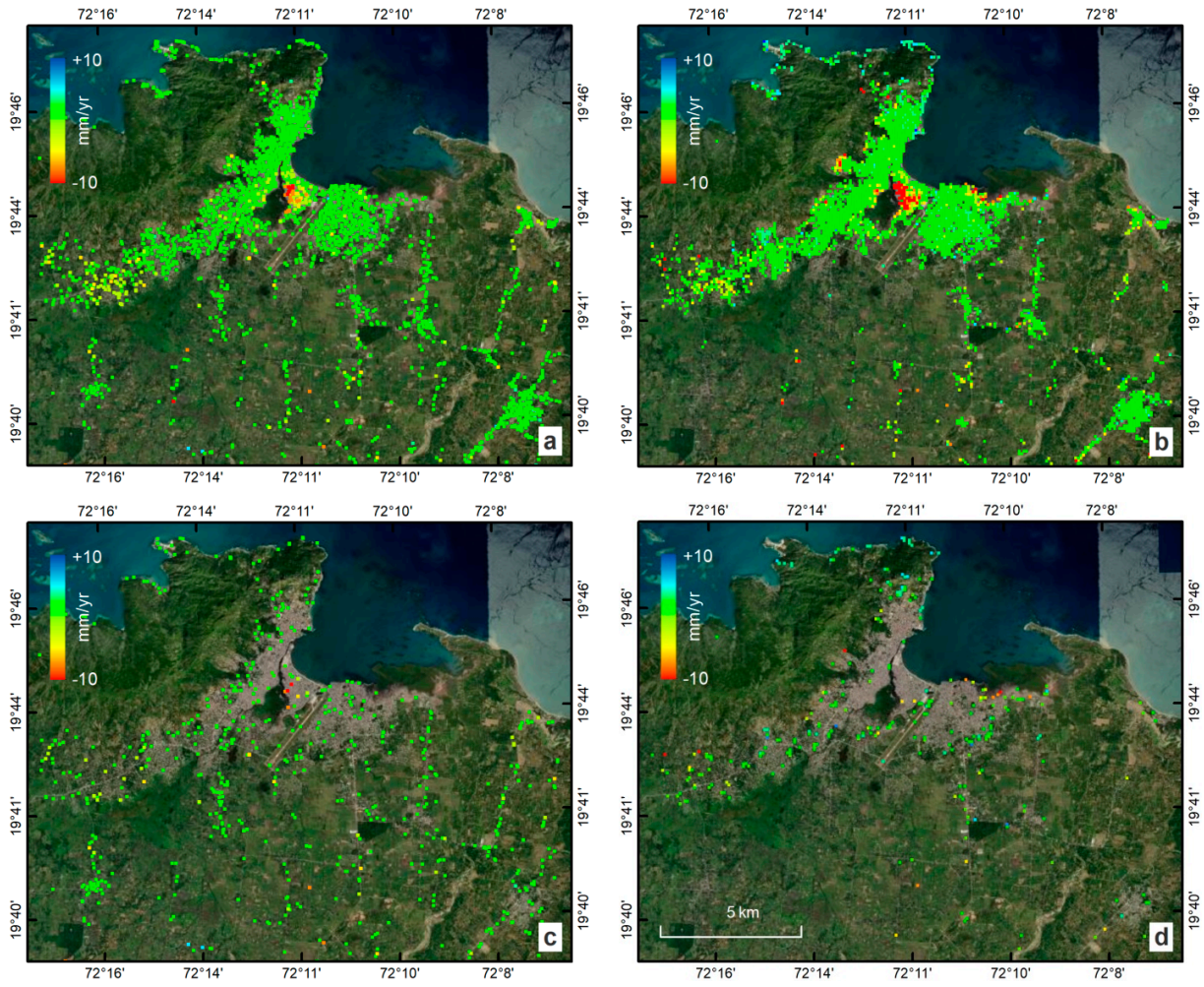
Job	N of S1 Scenes	N of S1 Dates	Observation Period	Area (sq. km)	N of Patches Range x Azi (only PSI)	Land Coverage	PSI Type	N of PS Targets (Amp. Disp.*)	IFG Execution Time (in hours)	PSI Execution Time (in hours)	Total Processing Time (in hours)	Size of IFG stack (in GB)
Job 1	258	194	04/2015-12/2021	~10000 (96x105)	4x4	100%	Med	109933 (0.42)	9	40	49 (2 days)	185
Job 2a	354	170	04/2015-12/2021	~9000 (94x94)	4x4	29%	Med	41056 (0.42)	20	11	31 (1.3 days)	404
Job 2b	354	170	04/2015-12/2021	~9000 (95x95)	1x1	29%	Med	41191 (0.42)	20	65	85 (3.5 days)	404
Job 3	200	199	04/2015-12/2021	~4000 (65x65)	4x4	6%	Med	11500 (0.42)	7	9	16 (<1 day)	143
Job 4a	387	190	04/2015-12/2021	~8000 (90x90)	4x4	94%	Med	103085 (0.42)	20	17	37 (1.5 days)	400
Job 4b	387	190	04/2015-12/2021	~8000 (90x90)	4x4	94%	Full	1095524 (0.42)	20	53	73 (3 days)	400
Job 5a	200	198	04/2015-12/2021	~360 (18x20)	4x4	25%	Med	3162 (0.42)	6	2	8 (<1 day)	120
Job 5b	200	198	04/2015-12/2021	~360 (18x20)	4x4	25%	Full	39841 (0.42)	6	3	9 (<1 day)	120
Job 5c	200	198	04/2015-12/2021	~360 (18x20)	4x4	25%	Full	62305 (0.46)	6	3	9 (<1 day)	120

Note that reported execution time varies according to allocated processing resources (herein based on 40 nodes).

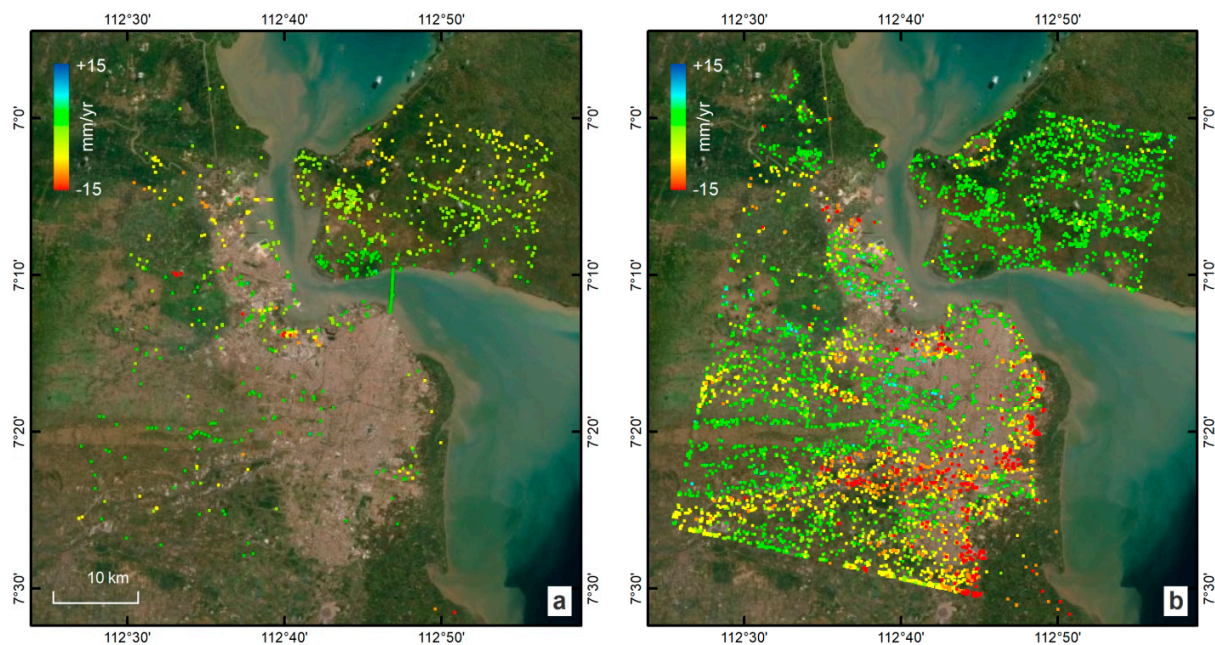
\* The *Amplitude Dispersion* parameter for PSI controls the amount and quality of PS targets detected.

**Table S2.** Summary information on SNAPPING processing inputs and obtained number of PS measurements for various demonstration sites presented.

Area of Interest	SNAPPING service	Acquisition Geometry	Sentinel-1 Track	Observation Period	N of S1 Dates	Area (sq. km)	N of PS targets
<b>Santorini Volcano</b>	PSI Med	Ascending	29	04/2015-05/2021 (~6 years)	319	76	2140
<b>San Andreas Fault (San Francisco)</b>	PSI Med	Descending	115	01/2016-12/2020 (~5 years)	148	2520	~49000
<b>Mexico Valley</b>	PSI Med	Descending	143	04/2015-12/2020 (5.8 years)	205	13600	~245000
<b>Kuwait</b>	PSI Med	Descending	108	04/2015-02/2021 (~6 years)	121	9950	~120000
<b>Grand Ethiopian Renaissance Dam</b>	PSI Med	Descending	50	01/2019-06/2021 (1.5 years)	49	365	~2500
<b>La Palma Volcano</b>	PSI Med	Descending	169	06/2019-12/2021 (~2.5 years)	134	708	~31400
<b>La Palma Volcano</b>	PSI Full	Descending	169	06/2019-12/2021 (~2.5 years)	134	708	~418000



**Figure S1.** Sentinel-1 LoS displacement rates over Cap-Haïtien (Haiti) for the period 2017-2019 based on (a) SNAPPING PSI Med and (b) P-SBAS services. The additional point measurements detected by (c) SNAPPING PSI Med and (d) P-SBAS services (distance larger than 100 m) are also shown. Contains modified Copernicus Sentinel-1 mission data (2017-2019), processed by AUTH on GEP.



**Figure S2.** Sentinel-1 LoS displacement rates (2015-2020) for additional point measurements detected by (a) SNAPPING PSI Med and (b) P-SBAS services over Surabaya (Indonesia). For details please refer to the manuscript. Contains modified Copernicus Sentinel-1 mission data (2015-2020), processed by AUTH on GEP.