



Supplement of

30 m monthly glacier surface velocity mapping in the Kangri Karpo region (2015–2024) using multi-source remote sensing data fusion

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S1. Imagery List

Table S1. Landsat Imagery List

Image Date	Previous interval	Representative Month
23/01/2015		
24/02/2015	32	1,2
12/03/2015	16	3
13/04/2015	32	3
18/07/2015	96	4,5,6,7
04/09/2015	48	8
06/10/2015	32	9
09/12/2015	64	10,11
25/12/2015	16	12
10/01/2016	16	1
27/02/2016	48	1,2
30/03/2016	32	3
02/06/2016	64	4,5
21/08/2016	80	6,7,8
24/10/2016	64	9,10
25/11/2016	32	11
11/12/2016	16	12
13/02/2017	64	1
01/03/2017	16	2
18/04/2017	48	3
05/06/2017	48	4
23/07/2017	48	5,6,7
25/09/2017	64	8,9
27/10/2017	32	10
12/11/2017	16	11
14/12/2017	32	12
30/12/2017	16	12
31/01/2018	32	1

16/02/2018	16	2
20/03/2018	32	3
08/06/2018	80	4,5
28/09/2018	112	6,7,8,9
30/10/2018	32	12
01/12/2018	32	11
02/01/2019	32	12
24/02/2019	53	1,2
14/08/2019	176	3,4,5,6,7
17/10/2019	64	8,9
02/11/2019	16	10
04/12/2019	32	11
06/02/2020	64	12,1
09/03/2020	32	2
25/03/2020	16	3
26/04/2020	32	4
28/05/2020	32	5
01/09/2020	96	6,7,8
22/12/2020	112	9,10,11,12
23/01/2021	32	1
08/02/2021	16	1,2
24/02/2021	16	2
12/03/2021	16	2,3
28/03/2021	16	3
29/04/2021	32	4
20/09/2021	144	5,6,7,8,9
07/11/2021	48	10
09/12/2021	32	11
25/12/2021	16	12
03/02/2022	40	1
07/03/2022	32	2
15/03/2022	8	3
02/05/2022	48	4

05/07/2022	64	5,6
15/09/2022	72	7,8
10/11/2022	56	9,10
28/12/2022	48	11,12
29/01/2023	32	1
02/03/2023	32	2
03/04/2023	32	3
06/06/2023	64	4,5
30/06/2023	24	6
01/08/2023	32	7
09/08/2023	8	8
02/09/2023	24	8
04/10/2023	32	9
13/11/2023	40	10
29/11/2023	16	11
23/12/2023	24	12
08/01/2024	16	1
09/02/2024	32	1
13/04/2024	64	2,3
29/04/2024	16	4
19/08/2024	112	5,6,7,8
22/10/2024	64	9,10
09/12/2024	48	11
25/12/2024	16	12

Table S2. Sentinel-1 Imagery List

Image Date	Previous interval	Representative Month
09/01/2015		
21/01/2015	12	1
26/02/2015	36	2
27/04/2015	60	3,4
02/06/2015	36	5
08/07/2015	36	6

01/08/2015	24	7
25/08/2015	24	8
12/10/2015	48	9
29/11/2015	48	10,11
23/12/2015	24	12
09/02/2016	48	1
04/03/2016	24	2
28/03/2016	24	3
21/04/2016	24	4
08/06/2016	48	5
26/07/2016	48	6,7
19/08/2016	24	8
06/10/2016	48	9
30/10/2016	24	10
23/11/2016	24	11
17/12/2016	24	12
03/02/2017	48	1
27/02/2017	24	2
04/04/2017	36	3
28/04/2017	24	4
03/06/2017	36	5
27/06/2017	24	6
02/08/2017	36	7
26/08/2017	24	8
13/10/2017	48	9
06/11/2017	24	10
30/11/2017	24	11
24/12/2017	24	12
29/01/2018	36	1
06/03/2018	36	2
30/03/2018	24	3
05/05/2018	36	4
29/05/2018	24	5

04/07/2018	36	6
28/07/2018	24	7
02/09/2018	36	8
26/09/2018	24	9
01/11/2018	36	10
25/11/2018	24	11
31/12/2018	36	12
05/02/2019	36	1
01/03/2019	24	2
25/03/2019	24	3
30/04/2019	36	4
24/05/2019	24	5
29/06/2019	36	6
23/07/2019	24	7
28/08/2019	36	8
21/09/2019	24	9
27/10/2019	36	10
02/12/2019	36	11
26/12/2019	24	12
31/01/2020	36	1
24/02/2020	24	2
31/03/2020	36	3
24/04/2020	24	4
30/05/2020	36	5
23/06/2020	24	6
29/07/2020	36	7
03/09/2020	36	8
27/09/2020	24	9
02/11/2020	36	10
08/12/2020	36	11
20/12/2020	12	12
25/01/2021	36	1
14/03/2021	48	2

26/03/2021	12	3
01/05/2021	36	4
25/05/2021	24	5
30/06/2021	36	6
24/07/2021	24	7
29/08/2021	36	8
04/10/2021	36	9
28/10/2021	24	10
27/12/2021	60	11,12
01/02/2022	36	1
25/02/2022	24	2
02/04/2022	36	3
26/04/2022	24	4
08/05/2022	12	5
01/06/2022	24	6
12/08/2022	72	7
05/09/2022	24	8
29/09/2022	24	9
04/11/2022	36	10
28/11/2022	24	11
10/12/2022	12	12
28/03/2023	108	1,2,3
03/05/2023	36	4
27/05/2023	24	5
02/07/2023	36	6
07/08/2023	36	7
30/10/2023	84	8,9,10
05/12/2023	36	11
29/12/2023	24	12
22/01/2024	24	1
27/02/2024	36	2
03/04/2024	36	3
27/04/2024	24	4

14/06/2024	48	5
08/07/2024	24	6
01/08/2024	24	7
06/09/2024	36	8
12/10/2024	36	9
05/11/2024	24	10
29/11/2024	24	11
23/12/2024	24	12

Table S3. Sentinel-2 Imagery List

Image Date	Previous interval	Representative Month
15/08/2015		
13/11/2015	90	8,9,10
23/11/2015	10	11
23/12/2015	30	12
22/01/2016	30	1
11/05/2016	110	2,3,4
30/07/2016	80	5,6,7
19/08/2016	20	8
28/09/2016	40	9
28/10/2016	30	10
07/12/2016	40	11
17/12/2016	10	12
05/02/2017	50	1
06/04/2017	60	2,3
05/06/2017	60	4,5
15/07/2017	40	6
04/08/2017	20	7
13/09/2017	40	8
18/10/2017	35	9
28/10/2017	10	10
27/11/2017	30	11
27/12/2017	30	12

31/01/2018	35	1
25/02/2018	25	2
01/04/2018	35	3
26/04/2018	25	4
05/06/2018	40	5
05/07/2018	30	6
25/07/2018	20	7
29/08/2018	35	8
18/09/2018	20	9
02/11/2018	45	10
27/11/2018	25	11
01/01/2019	35	12
31/01/2019	30	1
02/03/2019	30	2
06/04/2019	35	3
26/04/2019	20	4
05/06/2019	40	5
20/07/2019	45	6,7
03/10/2019	75	8,9
28/10/2019	25	10
27/11/2019	30	11
06/01/2020	40	12
26/01/2020	20	1
25/02/2020	30	2
31/03/2020	35	3
10/05/2020	40	4
02/09/2020	115	5,6,7,8
01/12/2020	90	9,10,11
31/12/2020	30	12
25/01/2021	25	1
26/03/2021	60	2,3
30/04/2021	35	4
12/10/2021	165	5,6,7,8,9

21/12/2021	70	10,11
05/01/2022	15	12
30/01/2022	25	1
20/04/2022	80	2,3,4
25/05/2022	35	5
12/09/2022	110	6,7,8
01/11/2022	50	9,10
01/12/2022	30	11
05/01/2023	35	12
30/01/2023	25	1
01/03/2023	30	2
31/03/2023	30	3
30/05/2023	60	4,5
29/07/2023	60	6,7
02/09/2023	35	8
01/11/2023	60	9,10
01/12/2023	30	11
31/12/2023	30	12
04/02/2024	35	1
10/03/2024	35	2
30/03/2024	20	3
29/04/2024	30	4
19/05/2024	20	5
12/08/2024	85	6,7
10/11/2024	90	8,9,10
30/11/2024	20	11
25/12/2024	25	12

S2. Fuse Result

2015

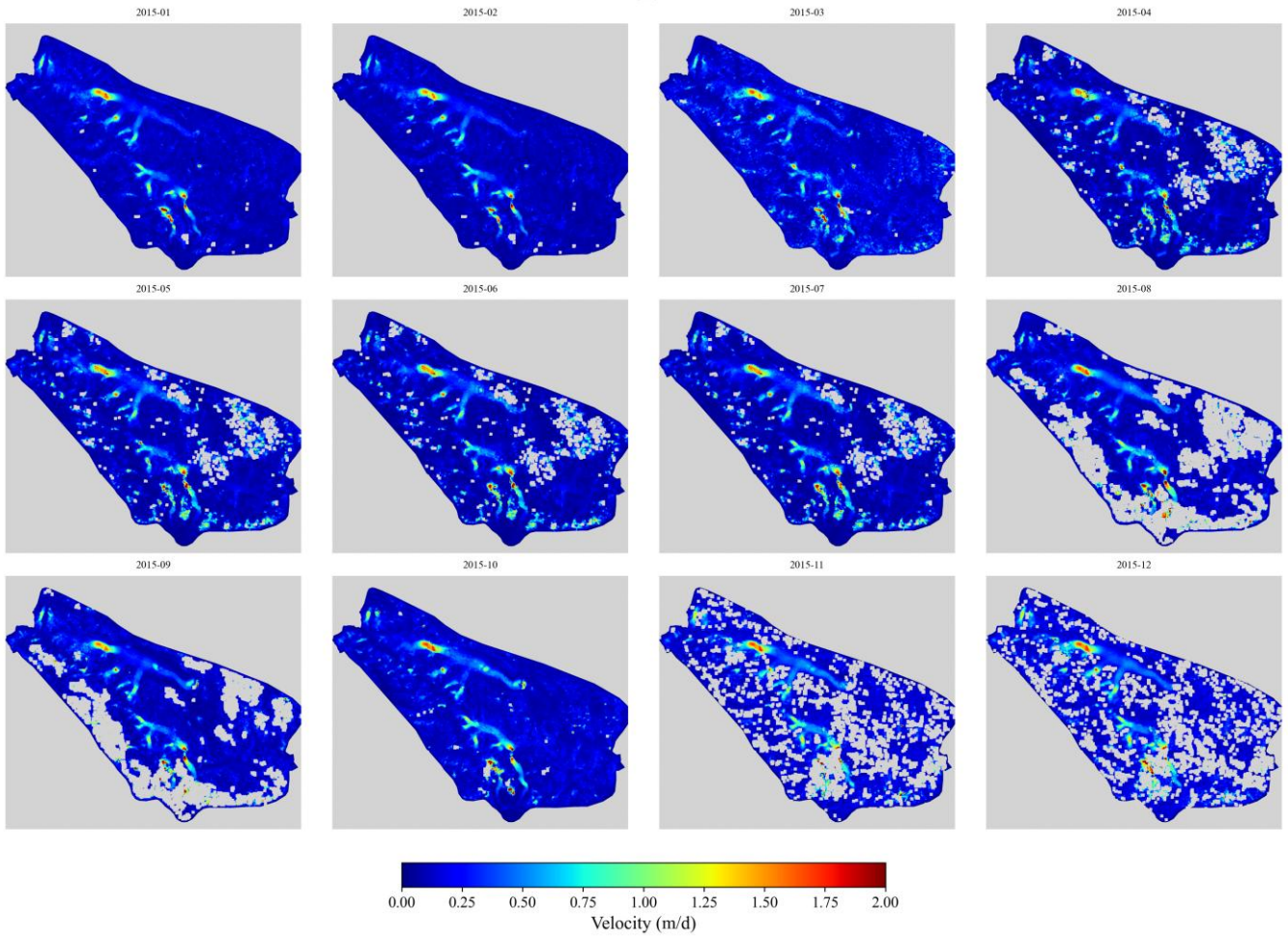


Figure S1: Fused glacier surface velocity for 2015

2016

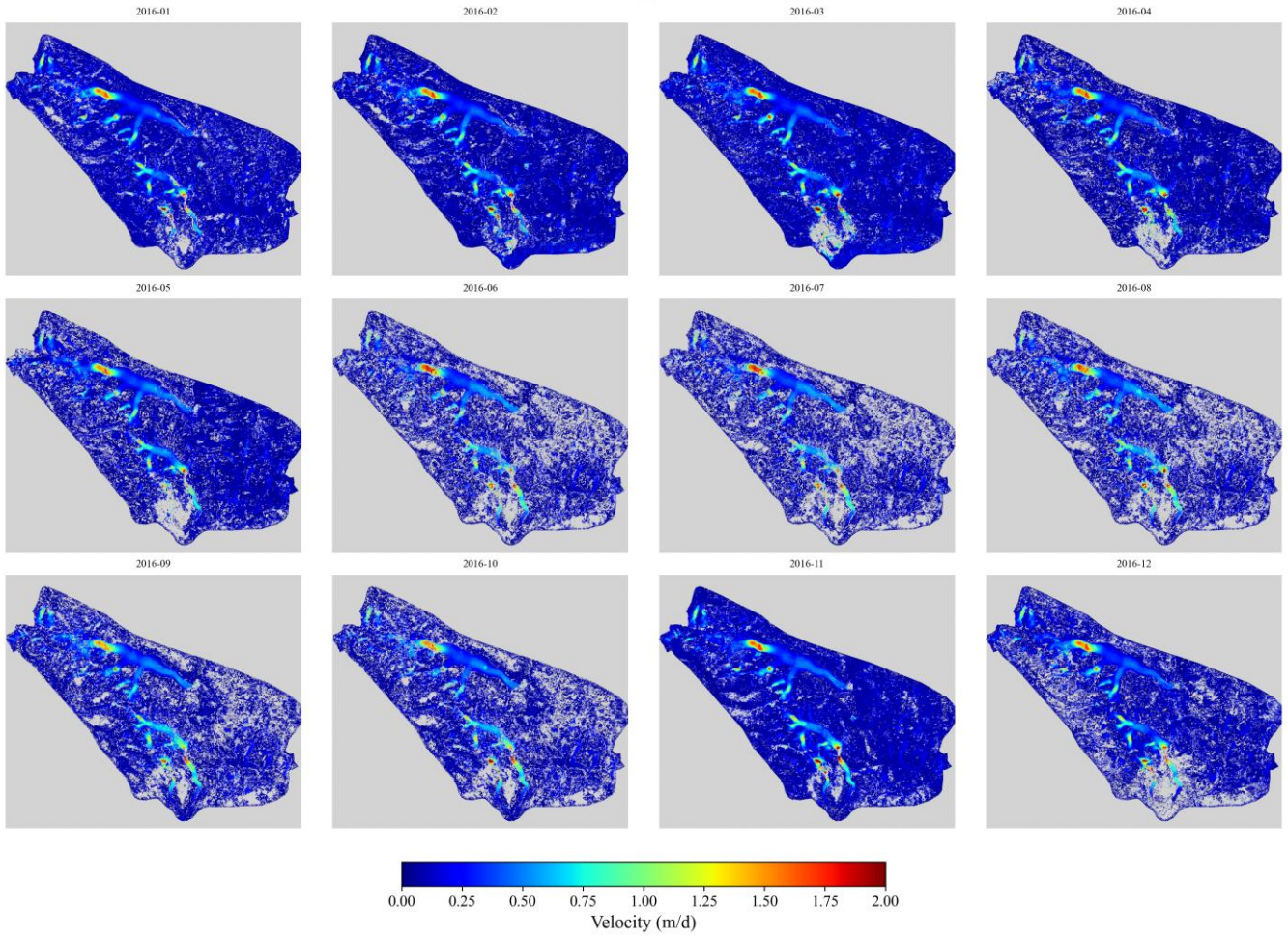


Figure S2: Fused glacier surface velocity for 2016

2017

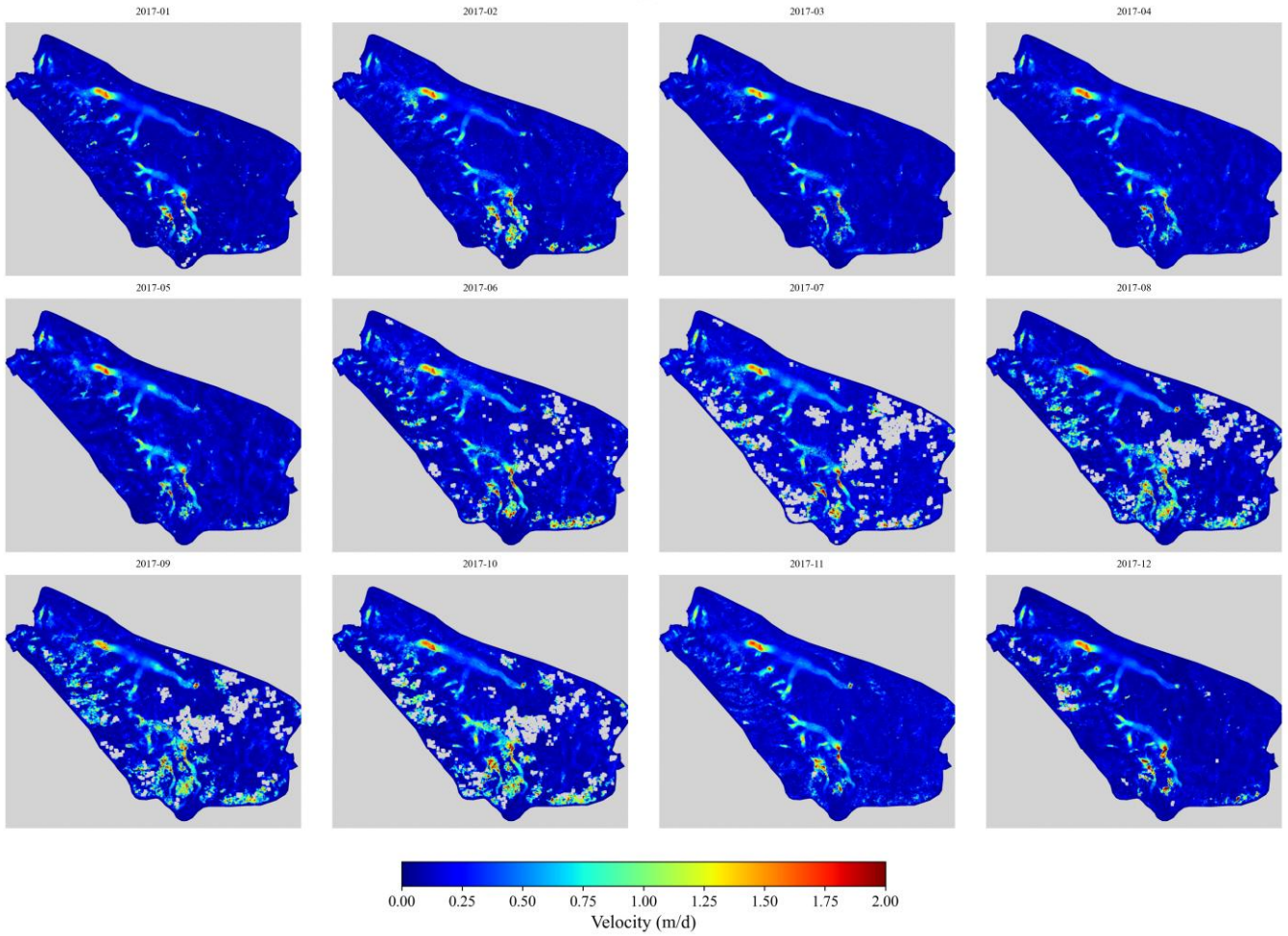


Figure S3: Fused glacier surface velocity for 2017

2018

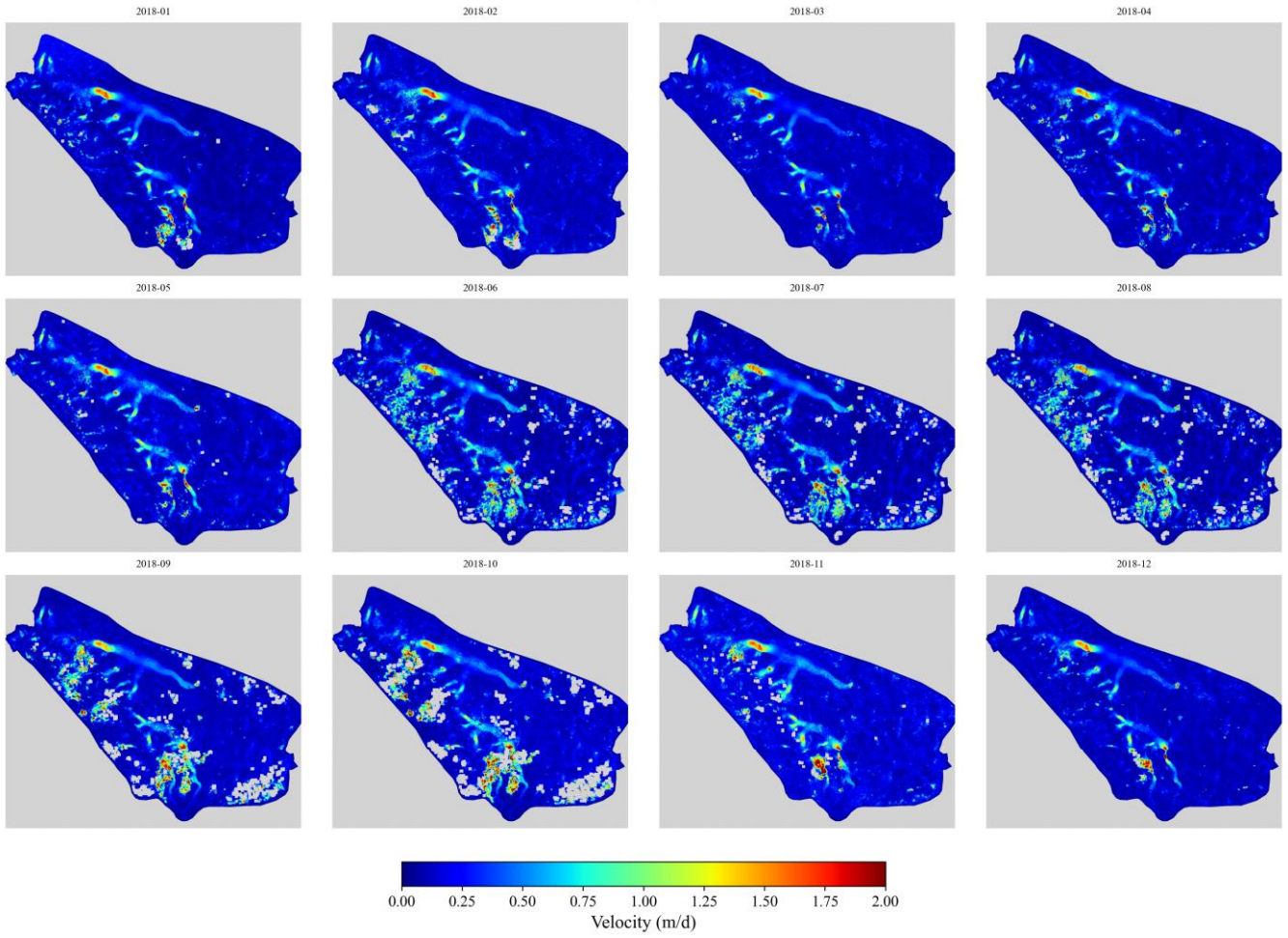


Figure S4: Fused glacier surface velocity for 2018

2019

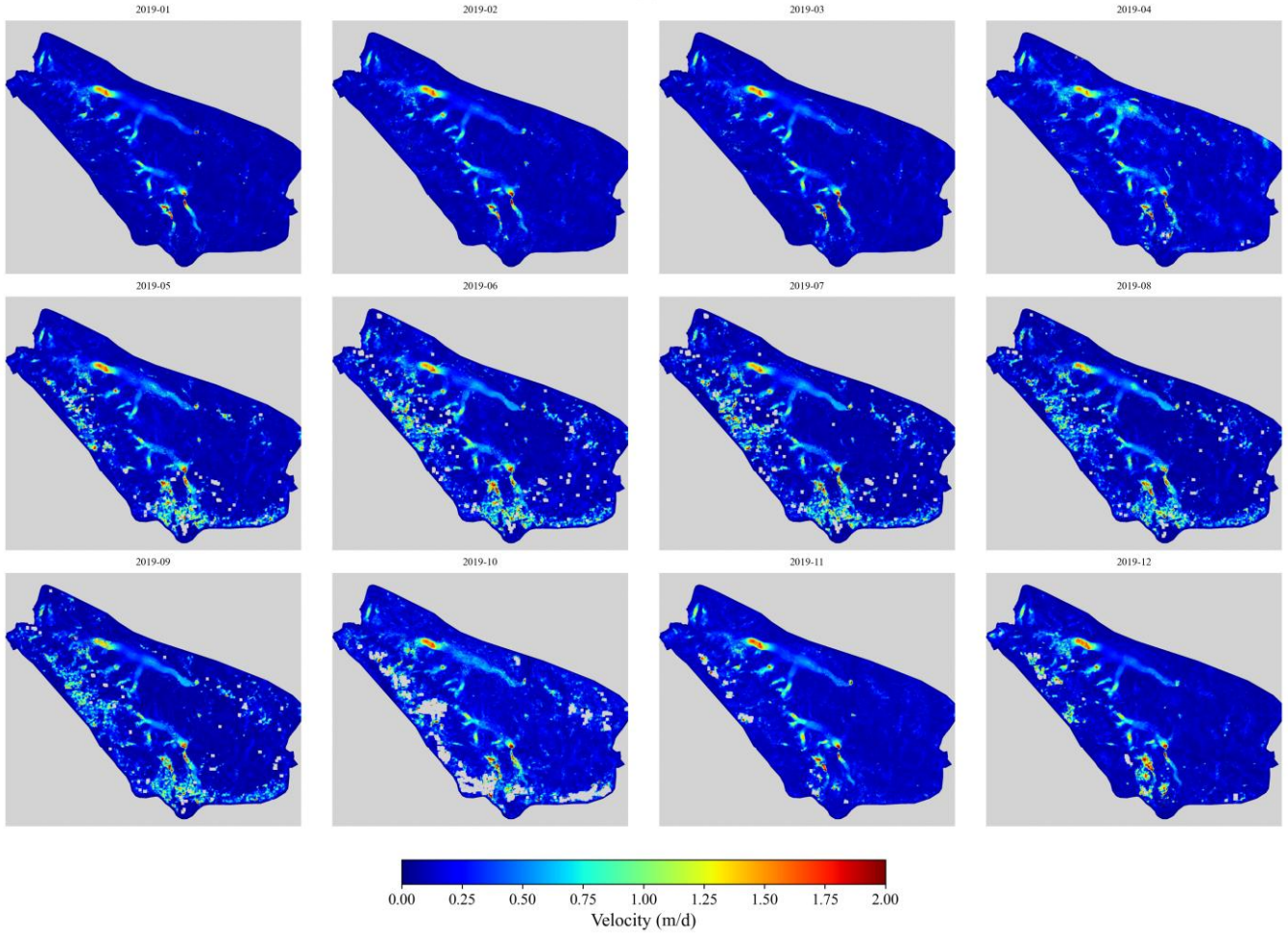


Figure S5: Fused glacier surface velocity for 2019

2020

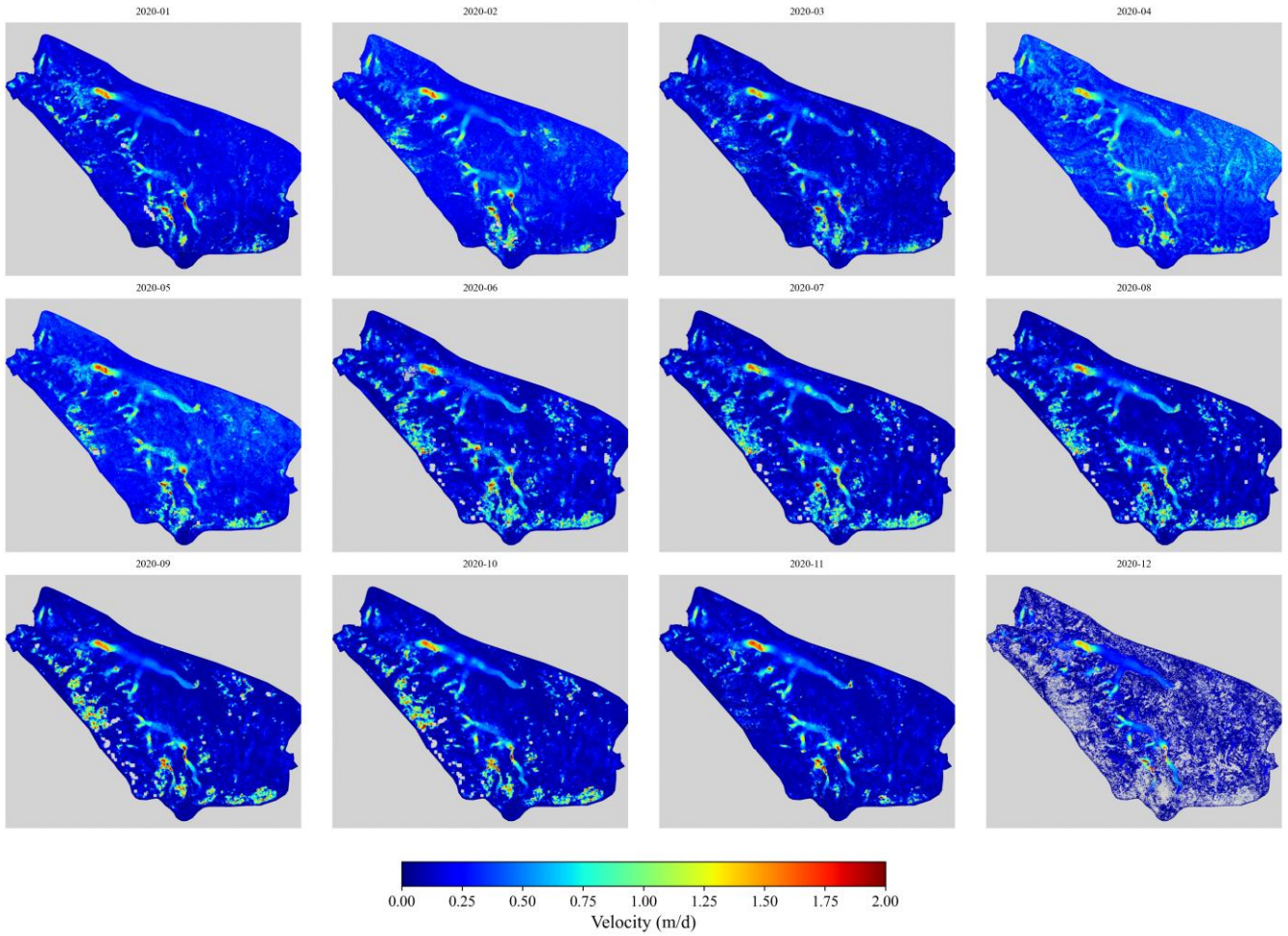


Figure S6: Fused glacier surface velocity for 2020

2021

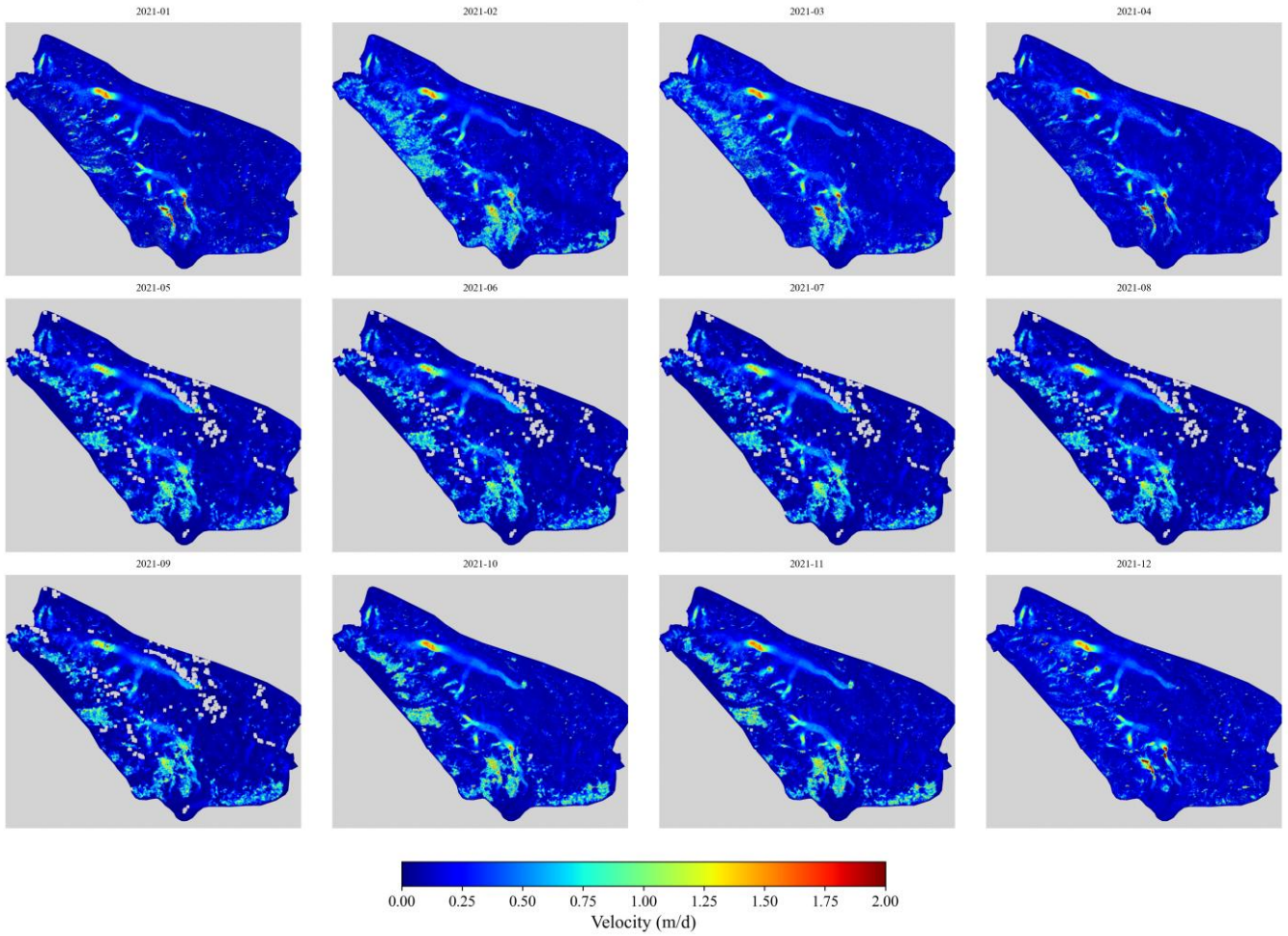


Figure S7: Fused glacier surface velocity for 2021

2022

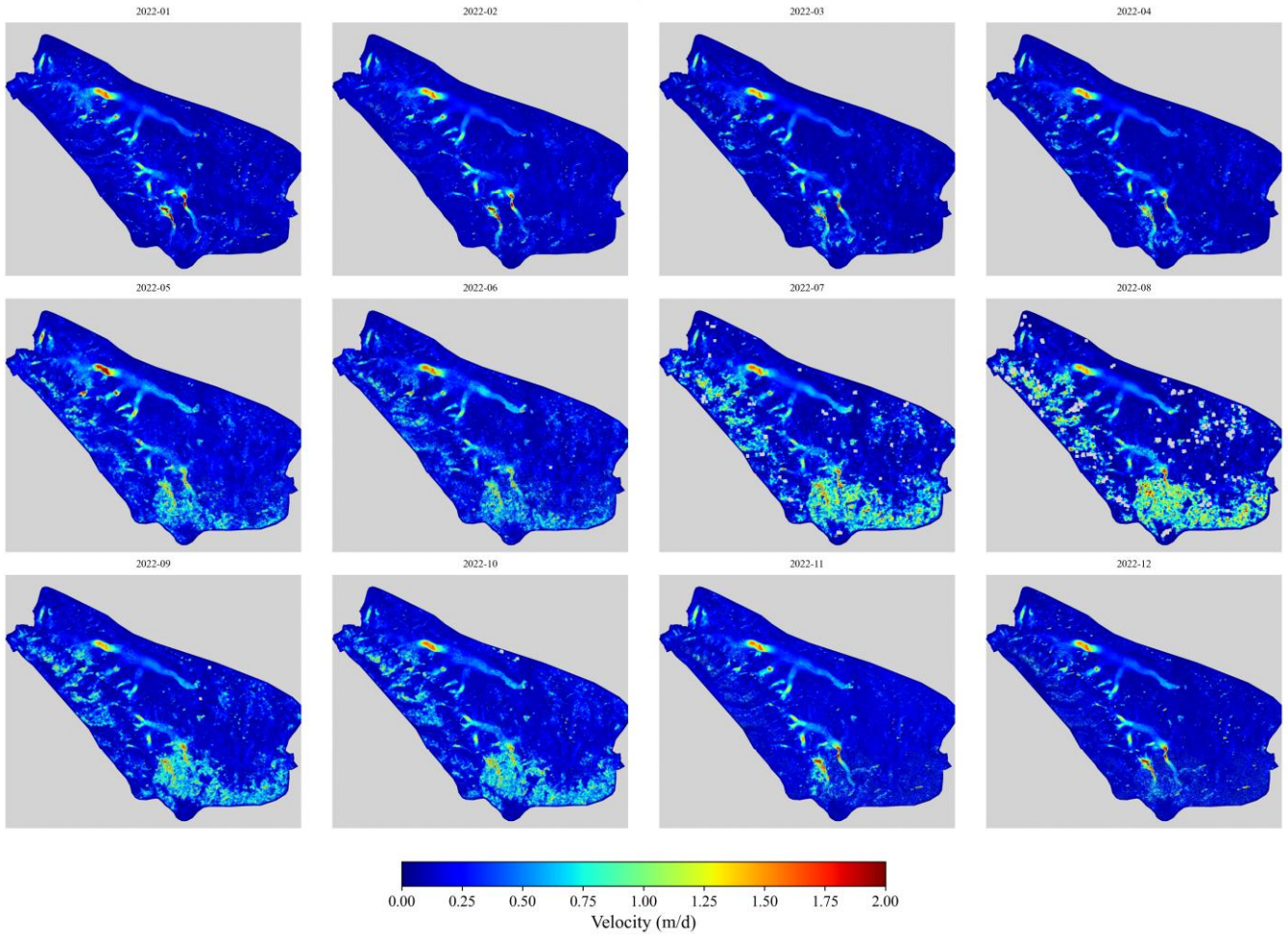


Figure S8: Fused glacier surface velocity for 2022

2023

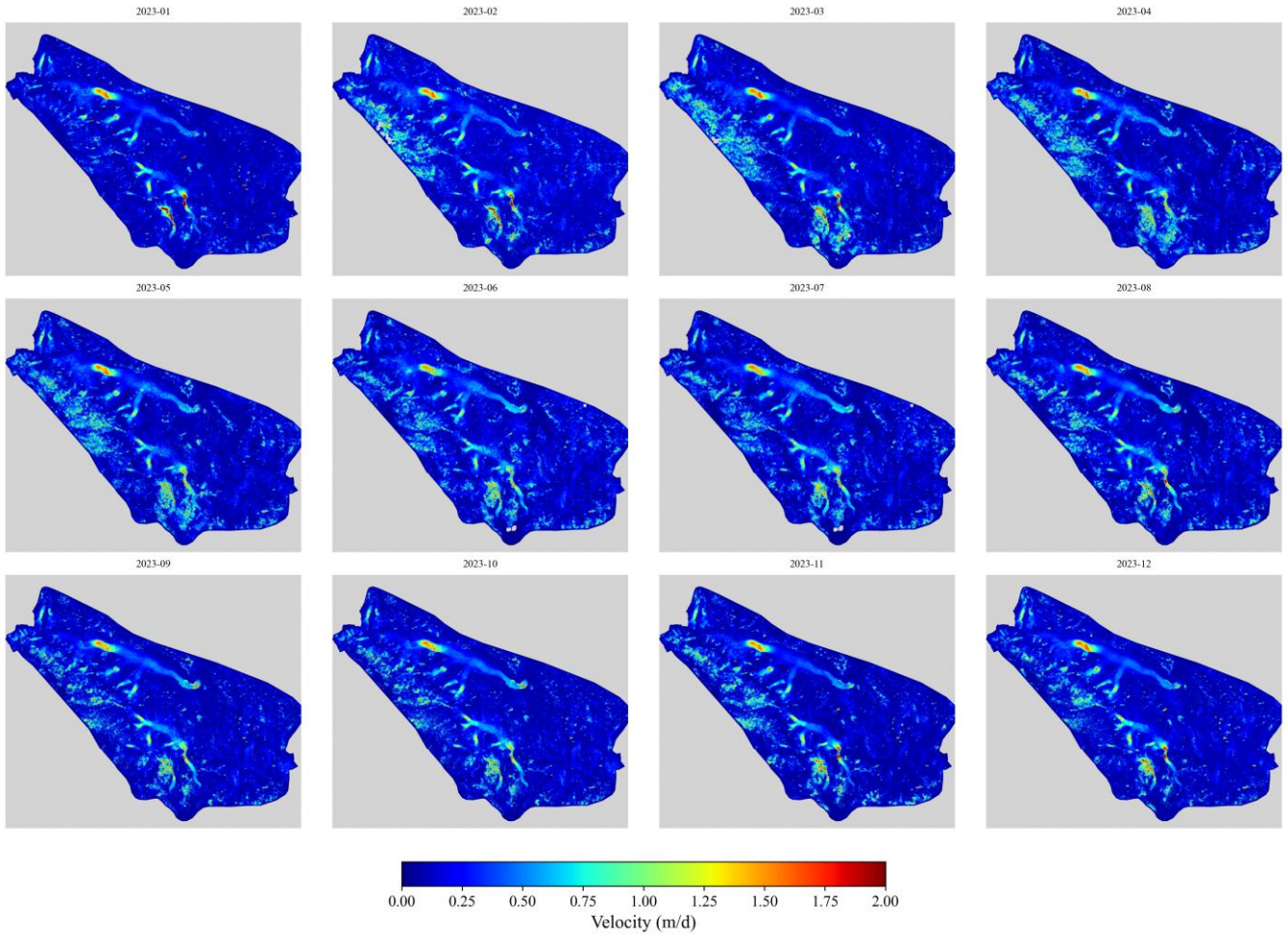


Figure S9: Fused glacier surface velocity for 2023

2024

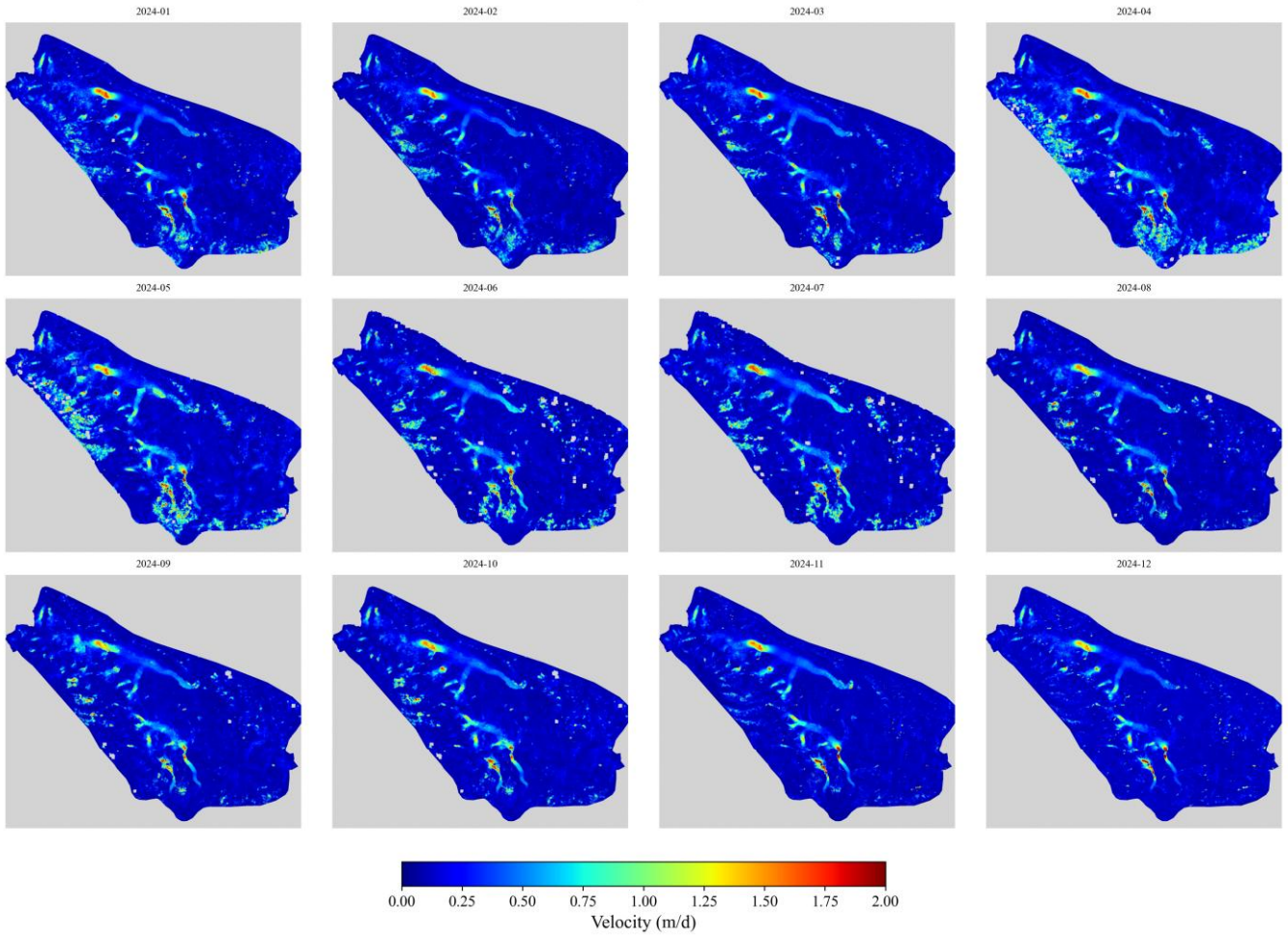


Figure S10: Fused glacier surface velocity for 2024