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SWORD-CTRIP mapping (SCM v1.0): a confidence-aware framework for mapping satellite-derived river reaches to gridded routing networks

Kaushlendra Verma and Simon Munier

Correspondence to: Kaushlendra Verma (er.kaushlendrav@gmail.com) and Simon Munier (simon.munier@meteo.fr)

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Supplement

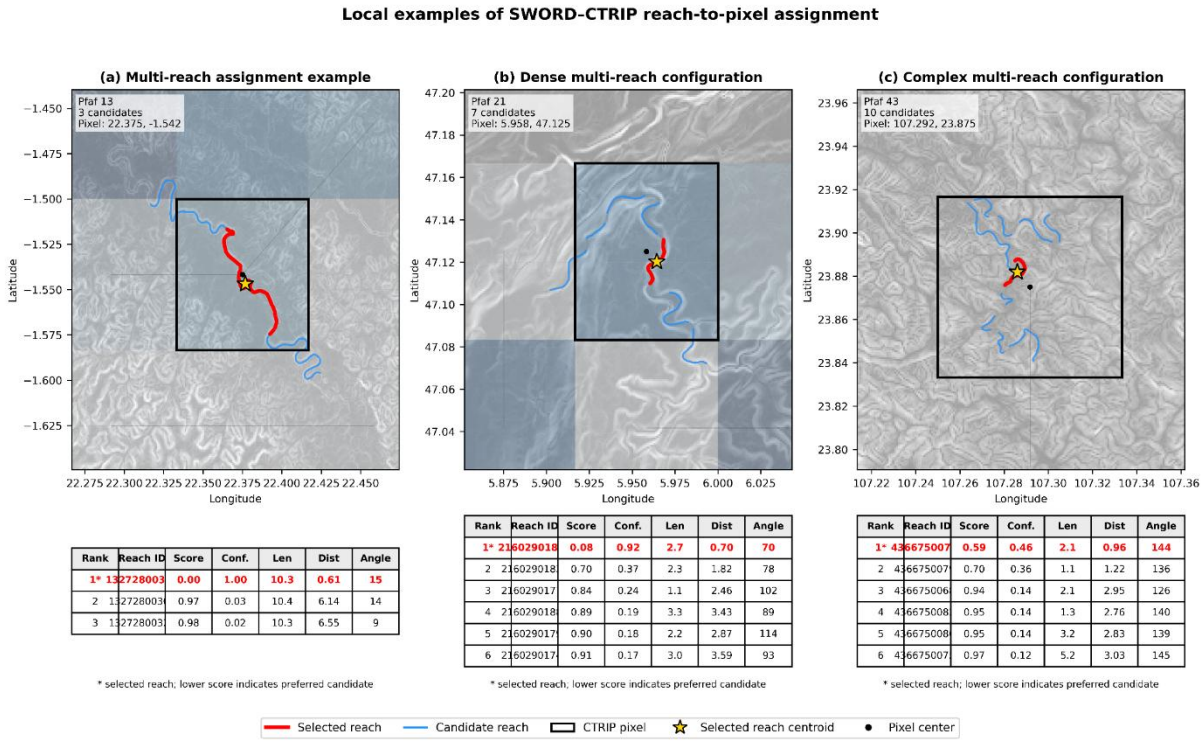


Figure S1: Local examples of SWORD–CTRIP reach-to-pixel assignment. CTRIP routing pixels are shown as grid-cell rectangles, SWORD reach centerlines as polylines, non-selected candidate reaches in light blue, and the selected reach in red. Panels show (a) a multi-reach assignment example, (b) a dense multi-reach configuration, and (c) a complex multi-reach configuration. SWORD data courtesy of SWORD. CTRIP data courtesy of CTRIP.

Table S1. Archived Pfafstetter-zone weight combinations and candidate-level counts from the multi-reach weight-evaluation stage. Three non-negative weights summing to unity were evaluated in increments of 0.1. Nominal High, Medium, and Low counts refer to scored candidate records before final minimum-score selection and therefore differ from the final classified-pixel counts reported in Table 3. The archived optimization maximizes the number of candidate records with raw composite score $S \geq 0.8$, rather than an independently calibrated measure of assignment accuracy. Zero weights indicate that the corresponding metrics were not selected by the zone-specific optimization; they do not imply exclusion of these metrics from the overall mapping framework.

pfaf	w_dist	w_length	w_angle	n_high	n_medium	n_low
11	0.8	0	0.2	521	63	18

12	0.9	0	0.1	815	111	29
13	1	0	0	1554	273	80
14	1	0	0	1137	159	37
15	1	0	0	123	18	8
16	1	0	0	143	40	10
17	1	0	0	418	105	23
18	1	0	0	454	46	16
21	0.9	0	0.1	488	121	32
22	0.9	0	0.1	904	141	31
23	1	0	0	1103	202	54
24	0.9	0	0.1	252	73	15
25	0.9	0	0.1	123	17	8
26	1	0	0	269	41	10
27	1	0	0	33	1	3
28	0.9	0	0.1	809	174	37
29	0.9	0	0.1	237	21	11
31	1	0	0	1431	286	73
32	1	0	0	594	142	24
33	1	0	0	484	75	16
34	0.9	0	0.1	980	222	47
35	1	0	0	1131	191	52
36	0.9	0	0.1	21	1	1
41	0.9	0	0.1	361	30	10
42	1	0	0	1139	323	75
43	0.9	0	0.1	4201	588	140
44	0.9	0	0.1	1559	202	49
45	0.9	0	0.1	4101	666	138
46	1	0	0	424	95	32
47	1	0	0	182	35	4
48	0.9	0	0.1	478	39	16
49	1	0	0	28	14	2
51	0.9	0	0.1	456	86	24
52	0.9	0	0.1	823	178	50
53	0.9	0	0.1	974	129	29
55	1	0	0	29	2	1
56	1	0	0	985	144	41
57	0.5	0	0.5	26	13	8
61	0.9	0	0.1	1886	220	52
62	0.9	0	0.1	7359	915	237
63	1	0	0	622	62	20
64	1	0	0	1907	255	69
65	0.8	0	0.2	392	38	10
66	1	0	0	200	48	11
67	1	0	0	290	39	18
71	1	0	0	255	91	29
72	1	0	0	520	104	26

73	0.9	0	0.1	466	17	8
74	0.9	0	0.1	948	185	37
75	0.9	0	0.1	622	100	32
76	1	0	0	26	5	3
77	1	0	0	258	86	20
78	1	0	0	163	27	14
81	1	0	0	360	112	31
82	1	0	0	282	77	18
83	1	0	0	171	44	12
84	0	0.9	0.1	39	12	9
85	0	0.1	0.9	34	2	11
86	1	0	0	0	0	0
91	0.5	0	0.5	4	2	0