

## Subduction and hydrogen Release: The case of Bolivian Altiplano

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Supplementary material:

**Table S1.** Site coordinates:

Site N°	Name	long	lat
1	<i>Without</i>	18°10'8.22"S	66°59'49.41"O
2	Popoo	18°23'2.56"S	66°56'35.10"O
3	Pazña	18°35'31.25"S	66°55'29.37"O
4	Malliri	18°44'47.8"S	66°43'14"O
5	Castilla Huma	19°08'32"S	66°41'07"O
7	Colchani-X	20°12'50"S	66°57'15"O
8	Palacio de sal	20°18'19.31"S	66°58'30.74"O
9	Salar	20° 5'18.54"S	67°31'4.55"O
10	Laguna Cachi	21°44'34.91"S	67°57'2.11"O
11	Laguna Kara	21°53'17.30"S	67°52'40.60"O
12	Sol de mañana	22°26'04"S	67°45'23"O
13	Laguna Chaipri	22°28'8.28"S	67°32'57.49"O
14	Laguna Blanca	22°46'57.14"S	67°48'9.97"O
15	Verde/Blanca	22°46'46.50"S	67°48'24.20"O
16	Quarry	22°39'28.1"S	67°45'30.1"O
17	Laguna Chiar Kkota	21°35'22.50"S	68° 3'16.70"O
18	<i>Without</i>	21°32'33.10"S	68°01'43"O
19	<i>Without</i>	21°16'36.9"S	67°16'19.7"O
20	<i>Without</i>	21°16'23.8"S	67°14'14.0"O
21	Mina san Cristobal	21° 4'28.29"S	67°10'43.00"O
22	Sajama_1	18°05'38"S	69°01'44"O
23	Sajama_2	18°05'21"S	68°58'37.6"O

**Table S2.** GA5000 raw data, **B** gas from bubbling water, **soil** gas soil measurement, **F** Fumaroles.

Day	Site	Type	Temp °C	Sample	CH <sub>4</sub> (%)	CO <sub>2</sub> (%)	O <sub>2</sub> (%)	H <sub>2</sub> (ppm)	CO (ppm)	H <sub>2</sub> S (ppm)	BAL-ANCE (%)
23/06/2022	1	B		1	0.3	37.5	9.5	0	0	3	54.3
		B		1bis	0.33	10		0	0	3	57.8
		B		2	0.6	9	13	0	0	0	80
	2	B	66	1	1.7	38	6.7	0	1	10	53.8
		B	62.5	1	1	10	12	0	0	0	78
	3	B	44.5	1	0.4	23	9.4	0	0	1	66.8
		B		1bis	0.4	25	9	0	0	1	65.6
		B	54	1	0.3	11	12	0	0	0	77
	4	B	40		0.3	0.4	11.3	0	0	0	84
24/06/2022	5	B	56	1	0.2	0.2	15.1	0	0	0	84.5
		B		2	0.3	7.5	13	0	0	0	77
		B		3	0.3	10.4	12.1	0	0	0	69.5
		B		4	0.3	20	11	0	0	0	70
	6	soil		1	1.4	1.4	15.1	0	0	0	84
		soil		2	0.3	0.2	15.3	0	0	0	84.2
		soil		3	0.3	0.2	15.3	7	0	0	84.2
		soil		4	0.3	0.2	15.4	1	0	0	84.1
	7	soil		1	0.3	25.7	13.3	0	2	0	61.2

		soil		2	0.3	25.8	12.1	1	2	0	61.8
		soil		3	0.3	28.5	11.7	1	0	0	59.5
		soil		4	0.3	8.3	14.1	87	2	0	77.4
		soil		5	0.3	6.2	14.4	0	0	0	79
		soil		6	0.3	0.6	15	41	0	0	84.1
	8	soil		1	0.3	0.2	15.5	14	0	0	84
		soil		2	0.3	0.2	15.5	0	0	0	84.1
	9	soil		1	0.3	0.2	15.4	0	0	0	84.1
		soil		2	0.3	0.2	15.4	0	0	0	84.1
26/06/2022	10	soil		1	0.4	0.2	15.3	5	0	0	84.1
		soil		2	0.4	0.2	15.3	11	0	0	84.1
	11	soil		1	0.4	0.4	15.2	0	0	0	84
		soil		2	0.4	0.2	15.2	0	0	0	84.2
		soil		3	0.4	0.2	15.2	0	0	0	84.2
27/06/2022	12	F	65	1	0.7	4.1	14.8	32	0	214	84
		F		2	0.5	1.1	15.6	0	0	74	82.6
		F	95	3	0.5	1.6	15.6	8	0	300	80.4
	13	soil		1	0.4	0.5	15.3	87	3	7	83.8
		soil			0.4	0.3	15.5	20	0	5	83.8
		soil			0.3	0.3	15.4	23	0	4	83.9
		soil			0.4	0.4	15.1	150	1	5	84.1
		soil			0.4	0.3	15.3	14	0	4	84
		soil			0.4	0.3	15.4	8	0	4	84
		soil			0.4	0.3	15.4	0	0	0	84
	14	soil			0.4	0.4	15.3	76	1	3	83.9
		soil			0.4	0.3	15.4	4	0	3	83.9
	15	soil			0.4	0.2	14.9	0	0	12	84.5
		soil			0.4	0.2	15	0	0	4	84.5
		soil			0.3	0.2	15	0	0	4	84.4
	16	soil			0.5	0.3	15.4	121	0	3	83.7
		soil			0.5	0.3	15.5	118	0	3	83.6
		soil			0.5	0.3	15.9	82	0	3	83.3
		soil			0.5	0.3	15.9	83	0	3	83.2
28/06/2022	17	soil			0.4	0.4	15.1	43	1	1	84.1
		soil			0.4	0.3	15.2	0	0	1	84.2
		soil			0.4	0.7	15.1	0	0	1	83.9
		soil			0.4	0.3	15.2	0	0	1	84.1
		soil			0.4	0.3	15.2	2	0	1	84.1
	18	soil			0.4	0.5	15.5	42	0	1	83.8
		soil			0.4	0.3	15.5	10	0	1	83.9
		soil			0.4	0.2	15.5	0	0	1	83.9
		soil			0.4	0.3	15.4	70	0	1	83.9
		soil			0.4	0.2	15.5	0	0	1	83.9
	19	soil			0.4	0.2	15.4	0	0	1	84
		soil			0.3	0.2	15.3	0	0	1	84.2
		soil			0.4	0.2	15.2	0	0	1	84.2
	20	soil			0.3	0.2	15.1	0	1	2	84.4
		soil			0.3	0.2	15.1	0	0	1	84.4
		soil			0.3	0.2	15.1	0	0	2	84.4
	21	soil			0.3	0.1	14.8	0	0	2	84.8
		soil			0.3	0.1	14.7	0	0	2	84.8

		soil		0.2	0.1	14.8	0	0	2	84.8
	22	B		0.4	0.1	15.1	0	0	2	84.4
		B		0.3	0.1	15.1	0	0	2	84.5
		B		0.3	0.1	15	0	0	2	84.6
		B		0.3	0.2	15.4	0	0	0	84.1
		B		0.4	0.2	15.2	1	0	0	84.1
		B		0.3	0.2	15.4	1	0	0	84.1
30/06/2022	23	B	74	0.5	33	12.6	0	0	0	54
		B	61	0.5	45	14	0	0	0	45
		B	80	0.4	48	10	0	0	2	40