

Cycling Segments Multimodal Analysis and Classification Using Neural Networks

Aleš Procházka, Saeed Vaseghi, Hana Charvátová, Ondřej Ľupa, Oldřich Vyšata

A map of the expedition across the Andes mountains showing the route 5694 km long with 48 segments and the altitude profile recorded by the GPS system during 272.2 hours of cycling through 5 countries, as specified in Table 1.

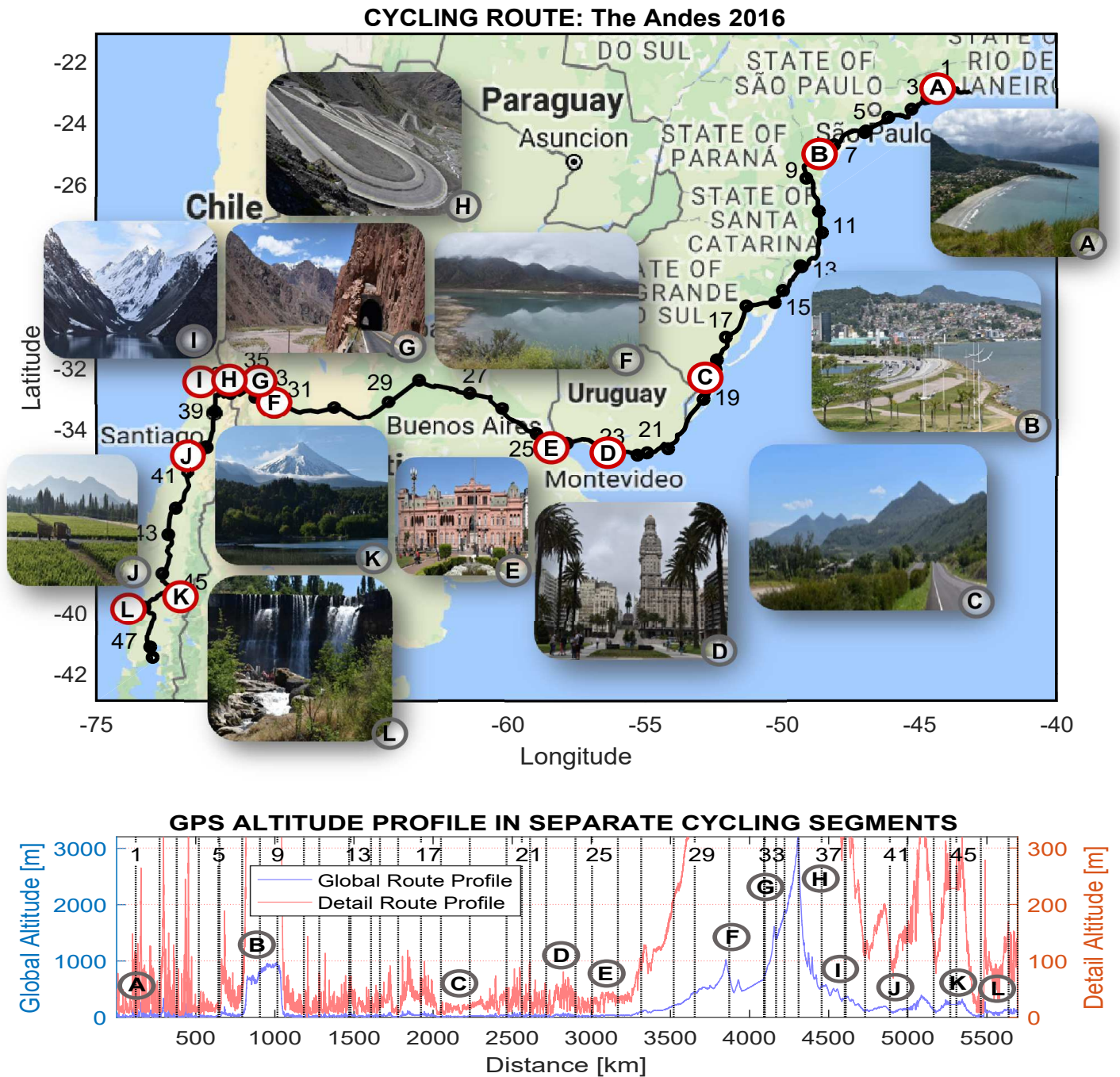


Table 1: Description of cycling segments across the Andes mountains recorded by the GPS system during the period from 20-10-2016 to 9-12-2016 presenting the length, average speed, elevation gain, and temperature in each cycling segment.

Segment	Date	Location	Length [km]	Avg. Speed [km/h]	Elev. Gain [m]	Avg. Temp. [deg C]
1	20-10	Rio de Janeiro	106.81	16.42	605	29.1
2	21-10	Mangaratiba	143.52	18.35	1378	22.6
3	22-10	Parati	102.08	18.03	869	19.3
4	23-10	Caragatatuba	134.12	18.35	1320	23.7
5	24-10	Santos	104.67	22.05	155	22.1
6	24-10	Peruibe	5.71	19.15	3	20.0
7	25-10	Peruibe	132.59	23.01	756	22.4
8	26-10	Jacupiranga	106.81	18.02	1771	24.2
9	27-10	Bocaiúva do Sul	97.80	16.74	1190	19.1
10	28-10	Tijucas do Sul	153.82	20.60	959	22.5
11	29-10	Balneário Camboriú	92.41	17.87	522	23.5
12	30-10	Florianópolis	179.26	22.69	1116	25.0
13	30-10	Içara	8.63	4.02	71	20.4
14	31-10	Criciúma	121.55	23.66	575	25.6
15	31-10	Três Cachoeiras	54.86	24.46	260	26.9
16	1-11	Osório	101.79	20.12	249	20.2
17	2-11	Canoas	139.51	18.99	655	20.2
18	3-11	Cristal	117.13	19.47	481	20.0
19	4-11	Capão do Leão	175.66	22.53	169	24.1
20	5-11	Santa Vitória do Palmar	226.26	26.07	380	25.2
21	6-11	La Paloma	92.65	21.24	604	30.0
22	6-11	San Carlos	49.25	19.47	269	31.7
23	7-11	Piriapolis	96.56	20.60	420	22.3
24	8-11	Montevideo	180.10	23.82	902	21.5
25	12-11	Buenos Aires	90.06	17.86	284	28.2
26	13-11	Campana	159.13	21.73	381	14.9
27	14-11	San Nicolas Estefeta	136.05	23.01	266	28.4
28	14-11	Canada de Gomez	198.93	25.59	280	30.1
29	16-11	Villa Maria	125.63	19.79	434	12.0
30	17-11	Rio Cuarto	209.50	21.89	838	21.4
31	18-11	Pozo Escondido	212.74	23.01	554	28.2
32	19-11	San Martin	0.19	12.23	0	19.0
33	19-11	San Martin	4.02	21.40	8	21.6
34	20-11	Mendoza	65.74	16.74	913	23.9
35	22-11	Potrerosillos	50.26	17.70	707	21.6
36	23-11	Uspallata	77.28	16.09	1618	10.6
37	24-11	Cristo Redentor	131.61	20.28	752	28.1
38	30-11	Santiago	133.98	20.44	391	27.4
39	30-11	San Fernando	4.92	1.78	29	25.7
40	1-12	San Fernando	113.96	21.57	224	24.4
41	2-12	Talca	148.17	19.79	313	30.5
42	3-12	Chillan	106.63	22.21	352	27.2
43	4-12	Los Angeles	163.43	20.44	1232	13.0
44	5-12	Temuco	100.05	20.60	611	13.9
45	6-12	Alumine	36.97	9.17	227	18.2
46	7-12	Pucon	149.59	19.96	689	20.8
47	8-12	Valdivia	164.01	18.19	955	20.1
48	9-12	Frutillar Bajo	54.86	17.38	1771	20.8