On the Wind Farm Cable Routing Problem Optimization via
Path-Relinking Metaheuristic [1]

ID	PR5	PR6	VNS	MAHM	ID	PR5	PR6	VNS	MAHM
1	67189.20	59619.20	**7283.96**	37385.82	44	59918.64	**0.00**	23288.23	**0.00**
2	76941.06	75887.70	**0.00**	441722.09	45	17011.29	**0.00**	**0.00**	107738.76
3	319380.25	93150.71	**60885.72**	554065.63	46	7177.22	5827.20	**5532.65**	1473905.31
4	56591.09	55833.89	41668.22	**40556.92**	47	117251.09	117720.34	**0.00**	62516.25
5	69127.42	38623.59	**0.00**	218442.98	48	24121.10	25463.52	**0.00**	175863.03
6	66974.13	8158.29	8158.29	**0.00**	49	94745.80	102657.29	**0.00**	205907.86
7	107418.80	32754.08	35916.84	**22203.76**	50	66950.69	**27202.61**	48749.82	169455.71
8	47186.66	**0.00**	82925.75	**0.00**	51	160844.65	127369.96	**0.00**	**0.00**
9	69170.91	**3382.76**	76100.11	23065.63	52	125519.13	116002.47	**0.00**	124098.00
10	121995.96	**3872.04**	34373.77	146145.00	53	**0.00**	**0.00**	42542.98	224789.96
11	15904.33	66450.26	**0.00**	115003.82	54	**18328.94**	18571.84	22117.05	153667.13
12	**1463.81**	11595.46	9417.39	176890.64	55	60105.54	99695.58	**0.00**	96818.43
13	29635.82	22226.86	**0.00**	93286.99	56	242044.17	166803.05	54582.41	**32736.44**
14	78987.40	77199.89	**0.00**	71087.46	57	23355.77	20152.79	**11860.63**	101855.16
15	**0.00**	**0.00**	10114.41	55739.57	58	**1563.55**	203558.83	17959.28	14426.85
16	62979.21	**0.00**	**0.00**	180911.43	59	28091.72	75755.04	**13801.86**	184298.55
17	123564.33	93483.98	115175.64	**0.00**	60	152829.63	**0.00**	**0.00**	750.72
18	108098.51	184952.76	**65432.19**	81830.44	61	23782.56	**0.00**	**0.00**	186340.47
19	37014.45	**17700.67**	27045.54	118403.15	62	**0.00**	**0.00**	**0.00**	40769.80
20	**26932.34**	132380.36	52283.95	134782.18	63	4494.22	**0.00**	**0.00**	38658.59
21	**0.00**	35565.69	0.00	84713.08	64	**0.00**	**0.00**	**0.00**	**0.00**
22	47249.66	49345.02	**0.00**	138950.58	65	1090.87	**0.00**	**0.00**	**0.00**
23	**0.00**	**0.00**	**0.00**	**0.00**	66	164266.23	**0.00**	30695.18	52023.06
24	**0.00**	**0.00**	**0.00**	49086.56	67	95944.27	**0.00**	**0.00**	1934869.71
25	84802.66	28120.92	**0.00**	5616.71	68	58451.00	9545.09	**0.00**	104435.70
26	9116.98	**0.00**	**0.00**	483856.97	69	124991.89	123829.94	**60253.23**	116933.56
27	**0.00**	**0.00**	**0.00**	75118.42	70	529358.69	**0.00**	**0.00**	408384.10
28	**0.00**	**0.00**	76295.62	157476.16	71	59900.05	110016.71	**0.00**	**0.00**
29	80474.50	3089.82	**0.00**	539029.46	72	606143.46	360416.04	**46332.45**	725492.88
30	328417.74	63626.73	**11162.35**	279928.60	73	190088.12	66157.49	142680.06	**0.00**
31	111865.23	2343.17	**0.00**	185328.39	74	196239.86	362698.72	**0.00**	1392552.82
32	35126.47	**26881.08**	50792.97	237133.10	75	**0.00**	**0.00**	**0.00**	**0.00**
33	48817.60	8640.39	**2438.28**	294451.97	76	191677.83	**0.00**	52249.40	45607.02
34	23088.86	**0.00**	15174.80	203871.33	77	**0.00**	**0.00**	**0.00**	2127673.71
35	69656.99	**0.00**	14997.95	1340059.85	78	15069.43	**0.00**	**0.00**	**0.00**
36	**0.00**	**0.00**	**0.00**	**0.00**	79	**0.00**	67166.97	18978.22	1045.04
37	57473.19	**1346.71**	11270.36	188120.75	80	**0.00**	**0.00**	38423.69	330538.44
38	9568.04	**5415.67**	23338.88	25186.50	81	**79047.22**	273818.48	173105.51	253996.30
39	0.00	**0.00**	14257.22	22597.46	82	40000.13	25036.61	**0.00**	459291.24
40	167483.07	151006.24	24751.16	**0.00**	83	251969.74	**0.00**	94190.54	237982.64
41	11150.63	**6690.38**	11974.35	38358.57	84	47377.21	248542.09	**0.00**	362959.13
42	**0.00**	**0.00**	4480.04	24052.13	85	**0.00**	**0.00**	**0.00**	114786.52
43	**0.00**	**0.00**	**0.00**	116480.49					

Table 1: Standard deviation results concerning the solution quality for small instances

ID	PR5	PR6	VNS	MAHM	ID	PR5	PR6	VNS	MAHM
86	156959.51	106910.72	**94254.17**	135821.53	124	88483.03	162970.90	156659.19	**13252.66**
87	137762.32	111452.00	60618.31	**0.00**	125	89143.47	29554.63	**22420.05**	32581.42
88	192587.94	174406.31	**64873.30**	86363.49	126	122244.48	111311.72	**0.00**	10344.18
89	**62547.68**	65555.30	87695.65	84529.22	127	248372.65	216159.73	**17761.56**	83390.93
90	53279.11	54948.24	48350.85	**22016.34**	128	57955.79	102396.67	**16135.62**	58079.32
91	16833.73	171191.37	**0.00**	207741.03	129	49455.32	37661.03	**0.00**	41120.45
92	29028.96	**0.00**	**0.00**	114278.57	130	40685.12	**0.00**	**0.00**	15100.20
93	119815.92	174794.55	**8019.64**	245493.54	131	66689.56	90257.05	**8479.99**	1136755.19
94	23001.44	**11161.86**	32901.63	111366.48	132	6508.62	14755.69	**0.00**	1373555.34
95	**0.00**	6316.59	47037.04	169461.48	133	59450.42	165583.81	**21959.28**	62797.97
96	**61750.17**	67312.23	70333.52	87145.01	134	**8364.81**	184483.26	53480.30	99630.93
97	**36912.71**	32030.92	43820.07	57276.96	135	124522.21	39991.28	33136.20	**18982.54**
98	27946.62	**37757.26**	26090.79	35750.99	136	280231.12	39758.40	**0.00**	249779.90
99	67860.21	36990.33	**0.00**	136502.16	137	102242.41	**0.00**	29366.89	208314.12
100	41008.79	**5284.32**	22295.99	113525.93	138	104095.33	87684.66	**13854.41**	484853.34
101	169540.06	276380.13	**43995.86**	104378.69	139	**0.00**			427884.13
102	120428.51	**49371.29**	80406.59	57808.17	140	132056.98	175950.37	**18516.15**	225603.14
103	60934.03	103986.64	**28131.08**	95521.92	141	145429.33	30282.36	2856.34	**0.00**
104	93738.67	7031.90	74226.58	**1017.08**	142	95710.62	100912.58	**0.00**	46097.25
105	112434.14	**9284.05**	54486.97	38157.21	143	92865.62	141804.89	155644.32	**63048.28**
106	119762.17	68126.47	**41451.75**	49317.64	144	56489.74	0.00	**0.00**	0.00
107	66915.83	54460.06	**31446.96**	75867.79	145	129134.96	66525.23	**46539.16**	147327.86
108	136628.92	**61081.40**	69158.52	62661.96	146	260987.68	217380.33	223262.41	**0.00**
109	**50025.75**	87281.06	175486.50	53763.34	147	225426.79	**0.00**	25055.25	96769.55
110	103626.75	115814.92	**68271.31**	106263.80	148	139062.62	103812.23	**0.00**	**0.00**
111	61047.92	38241.73	**14737.44**	88653.63	149	30007.65	412056.84	**0.00**	**0.00**
112	36377.75	99685.51	**0.00**	159277.78	150	327459.94	**46727.82**	128632.47	524524.46
113	60974.80	169331.55	**35685.02**	121177.37	151	**0.00**	**0.00**	146078.31	371751.37
114	69599.69	22413.62	24076.70	**0.00**	152	**0.00**	114968.98	69736.13	86381.09
115	56672.92	63909.51	3316.35	**0.00**	153	40323.09	249826.16	**12822.80**	284412.86
116	25874.68	32951.53	35409.17	**0.00**	154	**10203.73**	58352.93	52856.94	856999.23
117	49984.06	21748.41	40513.91	**0.00**	155	**0.00**	**0.00**	**0.00**	**0.00**
118	80966.23	**21555.09**	27378.31	90472.81	156	47065.68	17276.58	**0.00**	**0.00**
119	14509.25	**0.00**	**0.00**	**0.00**	157	**0.00**	**0.00**	**0.00**	83001.03
120	41129.40	**22706.08**	23500.95	55877.72	158	104096.92	147442.14	116729.35	**96065.45**
121	114727.96	96779.07	**77824.00**	110387.29	159	**0.00**	**0.00**	**0.00**	8749.75
122	**87579.56**	207630.80	92254.05	125398.13	160	**73420.68**	122416.13	121219.04	146514.46
123	70369.07	54071.91	80490.52	**22182.62**					

Table 2: Standard deviation results concerning the solution quality for medium instances

ID	PR5	PR6	VNS	MAHM	ID	PR5	PR6	VNS	MAHM
161	85187.11	97218.88	58981.33	**0.00**	181	**0.00**	**0.00**	58519.85	**0.00**
162	52604.53	77339.55	57189.96	**0.00**	182	**0.00**	**0.00**	36479.21	**0.00**
163	129861.76	185978.91	58733.38	**0.00**	183	**0.00**	**0.00**	3886.24	**0.00**
164	67398.94	48882.09	51446.92	**0.00**	184	**0.00**	**0.00**	24527.51	**0.00**
165	86653.74	23720.28	46248.85	**0.00**	185	**0.00**	**0.00**	17635.84	**0.00**
166	38822.94	128299.53	66145.22	**0.00**	186	**0.00**	**0.00**	62580.45	**0.00**
167	**5960.66**	62394.75	54641.46	133911.38	187	87372.27	189650.41	**74863.77**	83637.26
168	57857.15	80992.40	**43728.93**	102153.26	188	**0.00**	60252.09	12535.53	**0.00**
169	124936.00	169854.56	**13306.16**	122707.13	189	103857.67	**0.00**	33492.62	35017.60
170	**0.00**	80935.52	94546.63	174623.24	190	**0.00**	**0.00**	42126.73	69439.40
171	36688.21	42279.54	38263.15	**17065.40**	191	16182.99	26971.65	40180.62	**0.00**
172	103296.82	55393.23	37559.70	**37045.81**	192	50563.95	**0.00**	83809.80	35959.69
173	61090.97	59690.64	40933.66	**39106.69**	193	130092.93	**0.00**	24816.67	**0.00**
174	84237.77	112081.99	29748.71	**24403.53**	194	74557.64	**0.00**	20644.32	**0.00**
175	56507.49	54688.44	**11799.78**	32772.48	195	**0.00**	**0.00**	22513.65	48932.89
176	70686.08	93162.66	58170.41	**0.00**	196	**0.00**	**0.00**	91991.23	**0.00**
177	58029.42	119853.98	89566.78	**0.00**	197	147069.77	**0.00**	84840.70	**0.00**
178	**0.00**	**0.00**	57831.43	**0.00**	198	**0.00**	**0.00**	103660.19	**0.00**
179	73872.38	72627.00	30954.47	**17492.86**	199	**0.00**	**0.00**	53723.23	**0.00**
180	**0.00**	**0.00**	20260.46	**0.00**	200	**0.00**	**0.00**	115710.77	5871.28

Table 3: Standard deviation results concerning the solution quality for large instances