

# Results for VRPBench instances (mTSP)

Keld Helsgaun, November 30, 2018

Instance	min $k$	Müller-Meira	LKH-3	Gap (%)	Instance	min $k$	Müller-Meira	LKH-3	Gap (%)
exp-10-5	1	15095.885629	15095.88561	0.00	ManP-5000-1	20	954191.742	<b>88825.269</b>	<b>-90.69</b>
exp-100-5	2	35236.853041	<b>33889.53583</b>	<b>-3.82</b>	ManP-5000-2	20	2271821.549	<b>90921.758</b>	<b>-96.00</b>
exp-1000-5	5	2.1147E+11	<b>144420.76877</b>	<b>-31.71</b>	RWPToy-3-0	1	6023.937832	6023.93784	0.00
exp-10000-5	42	1.87672E+12	<b>1209075.26821</b>	<b>-35.58</b>	RWPToy-3-1	1	6826.653003	6826.65299	0.00
ManP-3-0	1	3709.581	3709.581	0.00	RWPToy-3-2	1	4127.370448	4127.37045	0.00
ManP-3-1	1	2485.357	2485.357	0.00	RWPToy-5-0	1	3742.109767	3742.10978	0.00
ManP-3-2	1	3786.186	3786.186	0.00	RWPToy-5-1	1	3461.359665	3461.35967	0.00
ManP-5-0	1	4686.357	4686.357	0.00	RWPToy-5-2	1	5188.914899	5188.91491	0.00
ManP-5-1	1	2686.480	2686.480	0.00	RWPToy-10-0	1	8103.109376	8103.10938	0.00
ManP-5-2	1	4134.533	4134.533	0.00	RWPToy-10-1	1	8727.033996	8727.03400	0.00
ManP-10-0	2	6575.903	<b>6377.245</b>	<b>-3.02</b>	RWPToy-10-2	1	6082.601657	6082.60167	0.00
ManP-10-1	1	4497.191	4497.191	0.00	RWPToy-20-0	1	11229.149347	11229.14935	0.00
ManP-10-2	1	4678.544	4678.544	0.00	RWPToy-20-1	1	11253.026628	11253.02666	0.00
ManP-20-0	2	7202.261	<b>7054.645</b>	<b>-2.05</b>	RWPToy-20-2	1	9357.553819	9357.55381	0.00
ManP-20-1	2	6982.255	<b>6971.587</b>	<b>-0.15</b>	RWPToy-50-0	1	17762.849447	<b>17759.01540</b>	<b>-0.02</b>
ManP-20-2	2	8728.363	<b>8612.079</b>	<b>-1.33</b>	RWPToy-50-1	1	13197.120948	<b>13042.69546</b>	<b>-1.17</b>
ManP-50-0	3	12611.093	<b>11681.949</b>	<b>-7.37</b>	RWPToy-50-2	1	15646.200132	15646.20016	0.00
ManP-50-1	3	10813.610	<b>10303.755</b>	<b>-4.71</b>	RWPToy-100-0	1	23439.941986	<b>22266.44133</b>	<b>-5.01</b>
ManP-50-2	3	11945.041	<b>11199.730</b>	<b>-6.24</b>	RWPToy-100-1	1	21404.038732	<b>21068.10293</b>	<b>-1.57</b>
ManP-100-0	3	16962.018	<b>14208.238</b>	<b>-16.23</b>	RWPToy-100-2	1	21565.328275	<b>21013.07041</b>	<b>-2.56</b>
ManP-100-1	3	16948.889	<b>14306.904</b>	<b>-15.59</b>	RWPToy-200-0	2	33590.426863	<b>31570.42650</b>	<b>-6.01</b>
ManP-100-2	3	15728.046	<b>14068.775</b>	<b>-10.55</b>	RWPToy-200-1	2	33655.199969	<b>30877.82860</b>	<b>-8.25</b>
ManP-200-0	5	26546.522	<b>20783.222</b>	<b>-21.71</b>	RWPToy-200-2	2	32211.406237	<b>29532.17884</b>	<b>-8.32</b>
ManP-200-1	5	26249.777	<b>20958.657</b>	<b>-20.16</b>	RWPToy-500-0	3	61231.448742	<b>47666.59853</b>	<b>-22.15</b>
ManP-200-2	5	26257.130	<b>20775.670</b>	<b>-20.88</b>	RWPToy-500-1	3	62710.650345	<b>46056.71434</b>	<b>-26.56</b>
ManP-500-0	7	49087.528	<b>31504.372</b>	<b>-35.82</b>	RWPToy-500-2	3	60970.050148	<b>48578.11618</b>	<b>-21.82</b>
ManP-500-1	7	52109.723	<b>31377.641</b>	<b>-39.79</b>	RWPToy-1000-0	4	99477.299207	<b>64043.31963</b>	<b>-35.62</b>
ManP-500-2	7	48930.341	<b>31142.839</b>	<b>-36.35</b>	RWPToy-1000-1	4	94550.435967	<b>64104.51638</b>	<b>-32.20</b>
ManP-1000-0	9	87619.991	<b>42437.748</b>	<b>-51.57</b>	RWPToy-1000-2	3	89635.383711	<b>63829.67401</b>	<b>-28.79</b>
ManP-1000-1	10	79051.618	<b>42585.384</b>	<b>-46.13</b>	RWPToy-5000-1	7		130005.24401	
ManP-1000-2	9	88791.674	<b>43204.802</b>	<b>-51.34</b>	RWPToy-5000-2	7	367078.707785	<b>131134.22516</b>	<b>-64.29</b>
ManP-5000-0	10	2381307.163	<b>89251.131</b>	<b>-96.25</b>	RWPToy-5000-2	7	387841.691495	<b>130110.75157</b>	<b>-66.45</b>

Instance generator available at

<https://www.ft.unicamp.br/docentes/meira/postvrp/>

Müller, F. F., A., Meira, L. A. A.:

Algoritmos Genéticos Aplicado ao Problema de Roteamento de Veículos.

Report, arXiv:1808.10866 [cs.NE] (2018)