**Calibration of Iterated Local search Tournament for Small Instances**

|  |  |
| --- | --- |
| Parameter |  |
| Fine Local search : FLS | Yes-No |
| PerLen | 1-2-3 |
| Destruction size : PerSol | 1-10-30-50 |
| Loop Size: VNS Loop | 100-200-300 |
| Tournament size: Toursize | 2-3-4-5 |

We have 288 combinations \* 5 replications for each instance \*162 Instances

**Analysis of Variance**

**Analysis of**

**Variance for RDI -**

**Type III Sums of**

**Squares**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Source* | *Sum of Squares* | *Df* | *Mean Square* | *F-Ratio* | *P-Value* |
| MAIN EFFECTS |  |  |  |  |  |
| A:2LS | 682150. | 1 | 682150. | 1827.92 | 0.0000 |
| B:PerLen | 6.13553E6 | 2 | 3.06776E6 | 8220.53 | 0.0000 |
| C:PerSol | 2.36349E6 | 3 | 787830. | 2111.11 | 0.0000 |
| D:VNSloop | 105519. | 2 | 52759.7 | 141.38 | 0.0000 |
| E:Ts | 224.38 | 3 | 74.7934 | 0.20 | 0.8961 |
| INTERACTIONS |  |  |  |  |  |
| AB | 8876.48 | 2 | 4438.24 | 11.89 | 0.0000 |
| AC | 10176.3 | 3 | 3392.1 | 9.09 | 0.0000 |
| AD | 17232.4 | 2 | 8616.2 | 23.09 | 0.0000 |
| AE | 115.596 | 3 | 38.532 | 0.10 | 0.9582 |
| BC | 5.82246E6 | 6 | 970409. | 2600.36 | 0.0000 |
| BD | 138973. | 4 | 34743.4 | 93.10 | 0.0000 |
| BE | 5998.24 | 6 | 999.707 | 2.68 | 0.0134 |
| CD | 184900. | 6 | 30816.6 | 82.58 | 0.0000 |
| CE | 14499.7 | 9 | 1611.08 | 4.32 | 0.0000 |
| DE | 632.307 | 6 | 105.385 | 0.28 | 0.9456 |
| RESIDUAL | 8.70342E7 | 233221 | 373.183 |  |  |
| TOTAL (CORRECTED) | 1.02525E8 | 233279 |  |  |  |

All F-ratios are

based on the

residual mean

square error.

1. **PerLen**

****

1 kills experiments we remove it and repeat

**Analysis of**

**Variance for RDI -**

**Type III Sums of**

**Squares**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Source* | *Sum of Squares* | *Df* | *Mean Square* | *F-Ratio* | *P-Value* |
| MAIN EFFECTS |  |  |  |  |  |
| A:2LS | 523420. | 1 | 523420. | 2112.85 | 0.0000 |
| B:PerLen | 5265.08 | 1 | 5265.08 | 21.25 | 0.0000 |
| C:PerSol | 182193. | 3 | 60731.2 | 245.15 | 0.0000 |
| D:VNSloop | 12060.3 | 2 | 6030.15 | 24.34 | 0.0000 |
| E:Ts | 1813.47 | 3 | 604.489 | 2.44 | 0.0624 |
| INTERACTIONS |  |  |  |  |  |
| AB | 1640.04 | 1 | 1640.04 | 6.62 | 0.0101 |
| AC | 5026.47 | 3 | 1675.49 | 6.76 | 0.0001 |
| AD | 14959.1 | 2 | 7479.56 | 30.19 | 0.0000 |
| AE | 266.632 | 3 | 88.8774 | 0.36 | 0.7828 |
| BC | 138690. | 3 | 46229.9 | 186.61 | 0.0000 |
| BD | 29101.8 | 2 | 14550.9 | 58.74 | 0.0000 |
| BE | 767.947 | 3 | 255.982 | 1.03 | 0.3765 |
| CD | 117719. | 6 | 19619.8 | 79.20 | 0.0000 |
| CE | 12734.1 | 9 | 1414.9 | 5.71 | 0.0000 |
| DE | 1410.4 | 6 | 235.067 | 0.95 | 0.4584 |
| RESIDUAL | 3.85151E7 | 155471 | 247.732 |  |  |
| TOTAL (CORRECTED) | 3.95622E7 | 155519 |  |  |  |

All F-ratios are

based on the

residual mean

square error.

1. Second level local search

****

2LS should be considered

1. **PerSol**



PerSol =10 is better

1. **VNS**

****

100 and 200 are near, we study interaction



Loop size=100 is better

1. **PerLen**

****

PerLen =3

1. **Tournamant size**



Ts= 5 is better

2LS :1

Per\_Len 3

Per\_Sol 10

VNSloop 100

Toursize 5