Table 1 – Execution Time × Problem Dimension

|  |  |  |  |
| --- | --- | --- | --- |
| Dimensions | Simplex Execution Time | Interior Points Execution Time | Hybrid Execution Time |
| 2.0 | 0.0 | 0.0003 | 0.0 |
| 4.0 | 0.0 | 0.0006 | 0.0 |
| 6.0 | 0.0 | 0.0006 | 0.0 |
| 10.0 | 0.0 | 0.0007 | 0.0 |
| 14.0 | 0.0 | 0.0082 | 0.0 |
| 18.0 | 0.0 | 0.0163 | 0.0 |
| 20.0 | 0.0 | 0.0228 | 0.0 |
| 22.0 | 0.0 | 0.0296 | 0.0 |
| 24.0 | 0.0 | 0.0384 | 0.0 |
| 26.0 | 0.0 | 0.0489 | 0.0 |

Table 2 – Number of iterations × Problem Dimension

|  |  |  |  |
| --- | --- | --- | --- |
| Dimensions | Simplex Iterations | Interior Points Iterations | Hybrid Iterations |
| 2.0 | 0.0 | 2.0 | 0.0 |
| 4.0 | 0.0 | 8.0 | 0.0 |
| 6.0 | 0.0 | 7.0 | 0.0 |
| 10.0 | 0.0 | 7.0 | 0.0 |
| 14.0 | 0.0 | 7.0 | 0.0 |
| 18.0 | 0.0 | 7.0 | 0.0 |
| 20.0 | 0.0 | 7.0 | 0.0 |
| 22.0 | 0.0 | 7.0 | 0.0 |
| 24.0 | 0.0 | 7.0 | 0.0 |
| 26.0 | 0.0 | 7.0 | 0.0 |

Table 3 – Objective Function Error × Problem Dimension

|  |  |  |  |
| --- | --- | --- | --- |
| Dimensions | Simplex Objective Funcion Error (%) | Interior Points Objective Funcion Error (%) | Hybrid Objective Funcion Error (%) |
| 2.0 | 0.0 | 0.0 | 0.0 |
| 4.0 | 0.0 | 0.0 | 0.0 |
| 6.0 | 0.0 | 0.0 | 0.0 |
| 10.0 | 0.0 | 0.0 | 0.0 |
| 14.0 | 0.0 | 0.0 | 0.0 |
| 18.0 | 0.0 | 0.0 | 0.0 |
| 20.0 | 0.0 | 0.0 | 0.0 |
| 22.0 | 0.0 | 0.0 | 0.0 |
| 24.0 | 0.0 | 0.0 | 0.0 |
| 26.0 | 0.0 | 0.0 | 0.0 |

Table 4 – Solution Error × Problem Dimension

|  |  |  |  |
| --- | --- | --- | --- |
| Dimensions | Simplex Solution Error (%) | Interior Points Solution Error (%) | Hybrid Solution Error (%) |
| 2.0 | 0.0 | 0.0 | 0.0 |
| 4.0 | 0.0 | 0.0 | 0.0 |
| 6.0 | 0.0 | 0.0 | 0.0 |
| 10.0 | 0.0 | 0.0 | 0.0 |
| 14.0 | 0.0 | 0.0 | 0.0 |
| 18.0 | 0.0 | 0.0 | 0.0 |
| 20.0 | 0.0 | 0.0 | 0.0 |
| 22.0 | 0.0 | 0.0 | 0.0 |
| 24.0 | 0.0 | 0.0 | 0.0 |
| 26.0 | 0.0 | 0.0 | 0.0 |

Table 5 – Step (Alpha) x Execution Time - Interior Point Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Step | Exec Time n=2 | Exec Time n=6 | Exec Time n=10 | Exec Time n=14 | Exec Time n=18 | Exec Time n=22 | Exec Time n=26 |
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 6 – Step (Alpha) x Iterations - Interior Point Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Step | Iterations n=2 | Iterations n=6 | Iterations n=10 | Iterations n=14 | Iterations n=18 | Iterations n=22 | Iterations n=26 |
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 7 – Step (Alpha) x Objective Function Error (%) - Interior Point Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Step | Objective Function Error (%) n=2 | Objective Function Error (%) n=6 | Objective Function Error (%) n=10 | Objective Function Error (%) n=14 | Objective Function Error (%) n=18 | Objective Function Error (%) n=22 | Objective Function Error (%) n=26 |
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 8 – Step (Alpha) x Solution Error (%) - Interior Point Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Step | Solution Error (%) n=2 | Solution Error (%) n=6 | Solution Error (%) n=10 | Solution Error (%) n=14 | Solution Error (%) n=18 | Solution Error (%) n=22 | Solution Error (%) n=26 |
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 9 – Step (Alpha) x Execution Time - Hybrid Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Step | Exec Time n=2 | Exec Time n=6 | Exec Time n=10 | Exec Time n=14 | Exec Time n=18 | Exec Time n=22 | Exec Time n=26 |
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 10 – Step (Alpha) x Iterations - Hybrid Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Step | Iterations n=2 | Iterations n=6 | Iterations n=10 | Iterations n=14 | Iterations n=18 | Iterations n=22 | Iterations n=26 |
| 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.05 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 11 – Gap x Execution Time - Interior Point Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Gap | Exec Time n=2 | Exec Time n=6 | Exec Time n=10 | Exec Time n=14 | Exec Time n=18 | Exec Time n=22 | Exec Time n=26 |
| 1e-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 12 – Gap x Iterations - Interior Point Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Gap | Iterations n=2 | Iterations n=6 | Iterations n=10 | Iterations n=14 | Iterations n=18 | Iterations n=22 | Iterations n=26 |
| 1e-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 13 – Gap x Objective Function Error (%) - Interior Point Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Gap | Objective Function Error (%) n=2 | Objective Function Error (%) n=6 | Objective Function Error (%) n=10 | Objective Function Error (%) n=14 | Objective Function Error (%) n=18 | Objective Function Error (%) n=22 | Objective Function Error (%) n=26 |
| 1e-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 14 – Gap x Solution Error (%) - Interior Point Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Gap | Solution Error (%) n=2 | Solution Error (%) n=6 | Solution Error (%) n=10 | Solution Error (%) n=14 | Solution Error (%) n=18 | Solution Error (%) n=22 | Solution Error (%) n=26 |
| 1e-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 15 – Gap x Execution Time - Hybrid Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Gap | Exec Time n=2 | Exec Time n=6 | Exec Time n=10 | Exec Time n=14 | Exec Time n=18 | Exec Time n=22 | Exec Time n=26 |
| 1e-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 16 – Gap x Iterations - Hybrid Algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Gap | Iterations n=2 | Iterations n=6 | Iterations n=10 | Iterations n=14 | Iterations n=18 | Iterations n=22 | Iterations n=26 |
| 1e-1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1e-10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |