

# Results

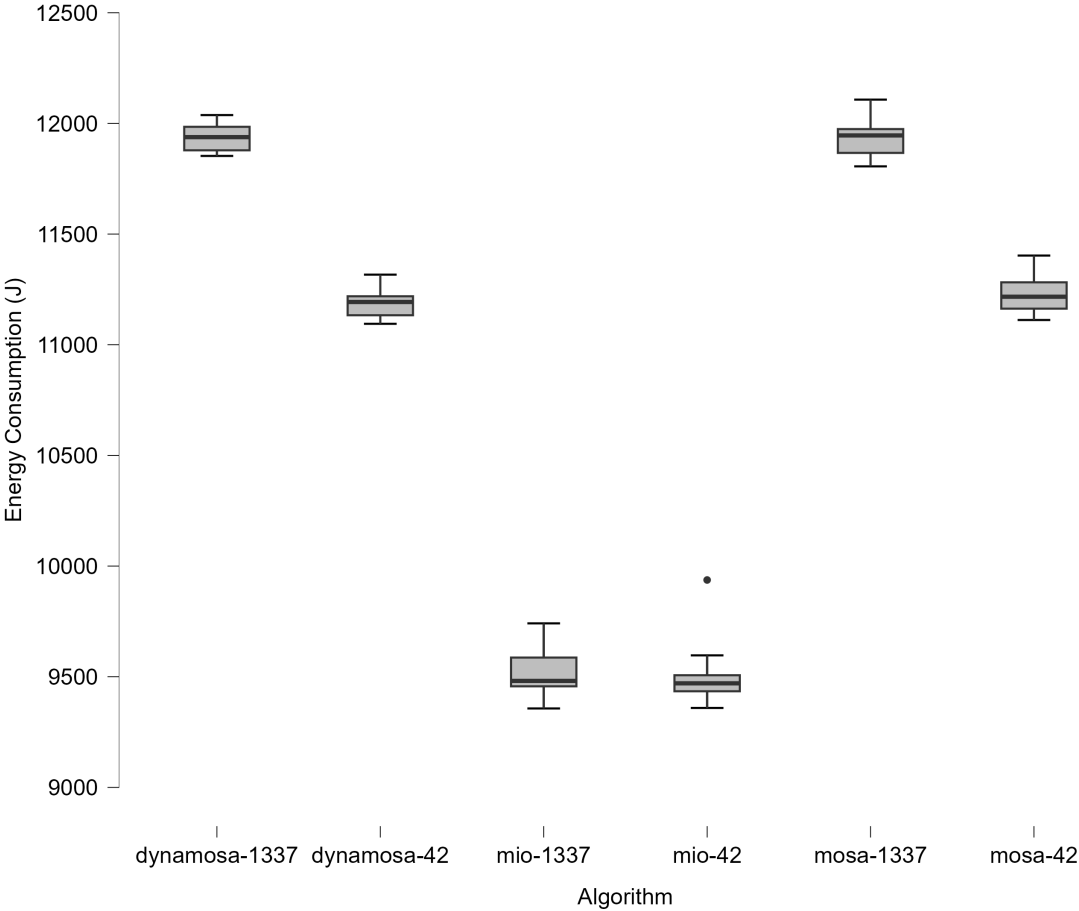
## Copy of Descriptive Statistics

Descriptive Statistics

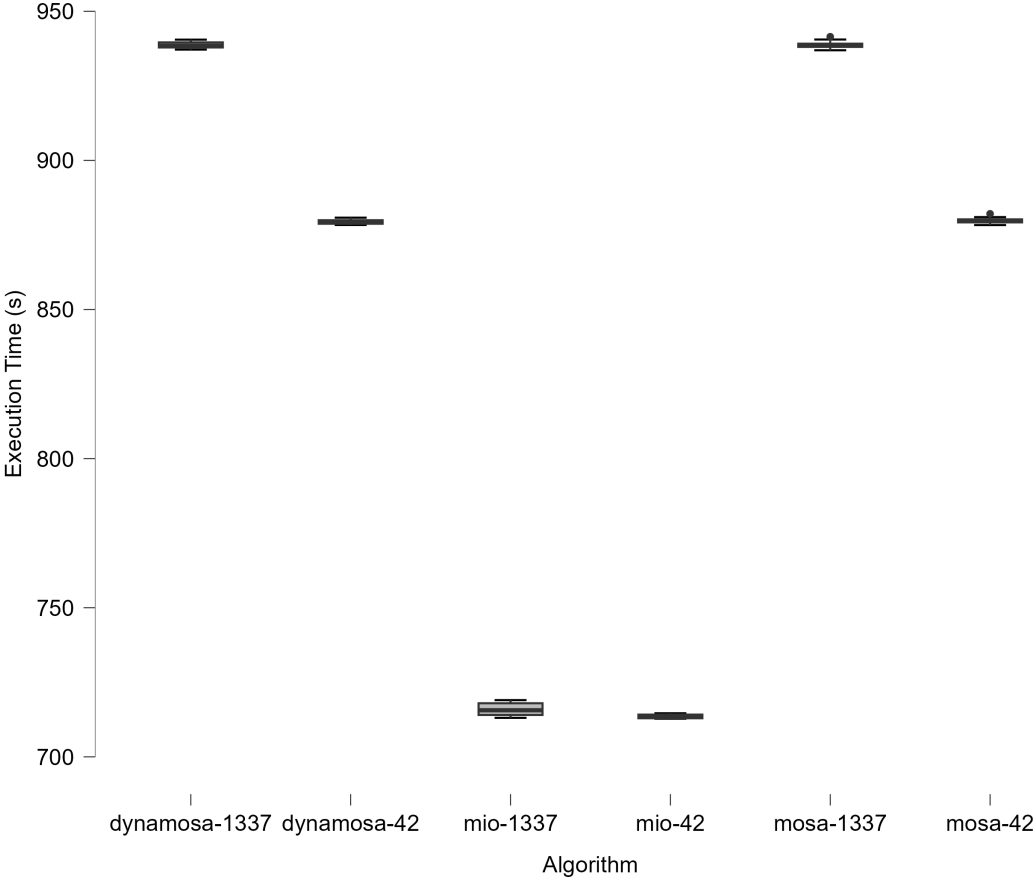
|                        |               | Valid | Mean      | Std. Deviation | Variance  | Range   | Minimum   | Maximum   |
|------------------------|---------------|-------|-----------|----------------|-----------|---------|-----------|-----------|
| Energy Consumption (J) | dynamosa-1337 | 14    | 11937.350 | 65.771         | 4325.836  | 184.614 | 11853.011 | 12037.625 |
| Energy Consumption (J) | dynamosa-42   | 14    | 11186.656 | 67.801         | 4596.932  | 222.104 | 11094.595 | 11316.699 |
| Energy Consumption (J) | mio-1337      | 14    | 9522.295  | 113.908        | 12975.085 | 384.453 | 9356.721  | 9741.174  |
| Energy Consumption (J) | mio-42        | 14    | 9502.096  | 141.545        | 20035.043 | 578.165 | 9359.007  | 9937.172  |
| Energy Consumption (J) | mosa-1337     | 14    | 11927.855 | 79.762         | 6362.023  | 301.540 | 11805.906 | 12107.446 |
| Energy Consumption (J) | mosa-42       | 14    | 11234.014 | 97.018         | 9412.439  | 291.154 | 11111.766 | 11402.919 |
| Execution Time (s)     | dynamosa-1337 | 14    | 938.705   | 1.013          | 1.027     | 3.333   | 937.154   | 940.487   |
| Execution Time (s)     | dynamosa-42   | 14    | 879.371   | 0.757          | 0.573     | 2.458   | 878.336   | 880.794   |
| Execution Time (s)     | mio-1337      | 14    | 715.868   | 2.115          | 4.473     | 5.943   | 713.084   | 719.027   |
| Execution Time (s)     | mio-42        | 14    | 713.598   | 0.689          | 0.475     | 1.835   | 712.785   | 714.619   |
| Execution Time (s)     | mosa-1337     | 14    | 938.741   | 1.171          | 1.372     | 4.548   | 936.927   | 941.475   |
| Execution Time (s)     | mosa-42       | 14    | 879.840   | 0.982          | 0.963     | 3.781   | 878.313   | 882.095   |
| Power (W)              | dynamosa-1337 | 14    | 12.717    | 0.062          | 0.004     | 0.185   | 12.642    | 12.827    |
| Power (W)              | dynamosa-42   | 14    | 12.721    | 0.074          | 0.005     | 0.237   | 12.630    | 12.867    |
| Power (W)              | mio-1337      | 14    | 13.302    | 0.158          | 0.025     | 0.527   | 13.121    | 13.648    |
| Power (W)              | mio-42        | 14    | 13.316    | 0.195          | 0.038     | 0.786   | 13.124    | 13.910    |
| Power (W)              | mosa-1337     | 14    | 12.706    | 0.079          | 0.006     | 0.294   | 12.601    | 12.894    |
| Power (W)              | mosa-42       | 14    | 12.768    | 0.105          | 0.011     | 0.311   | 12.636    | 12.948    |

Boxplots

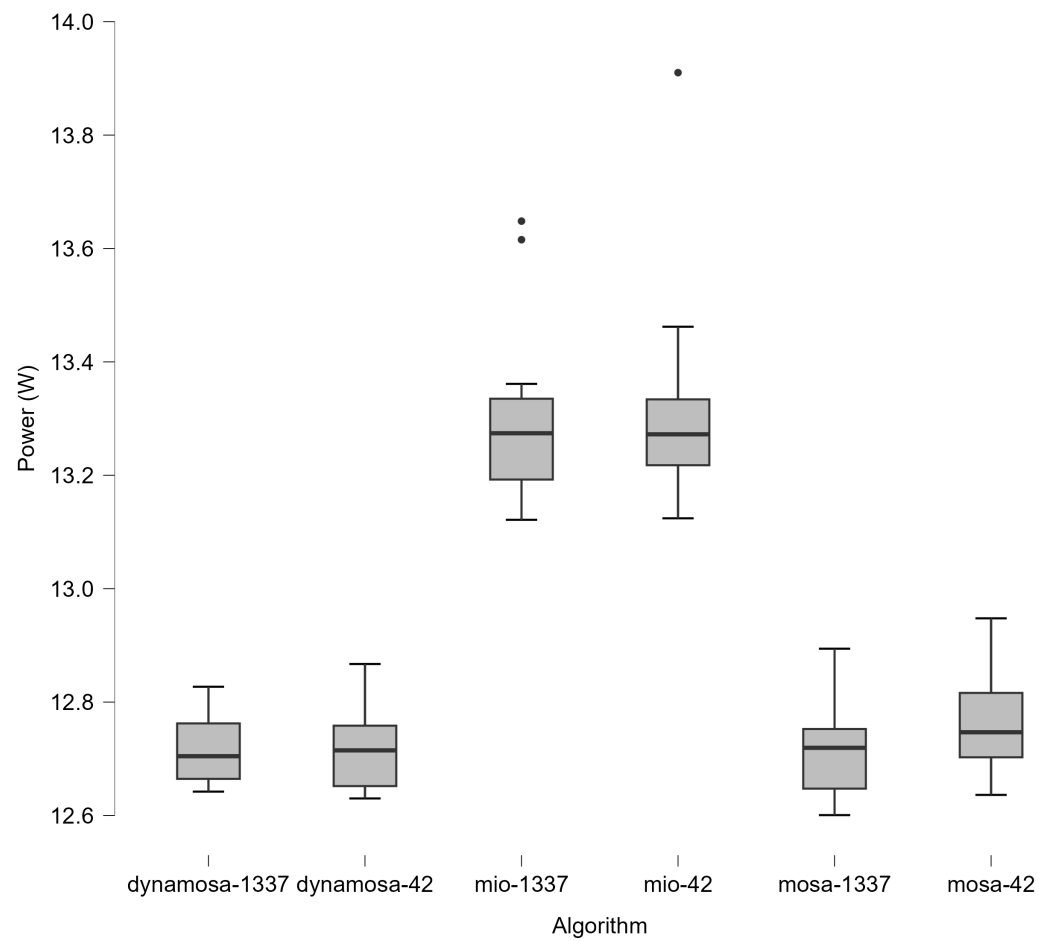
Energy Consumption (J)



Execution Time (s)



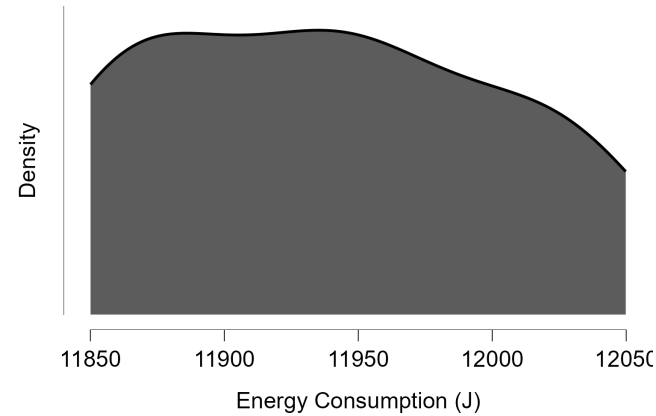
Power (W)



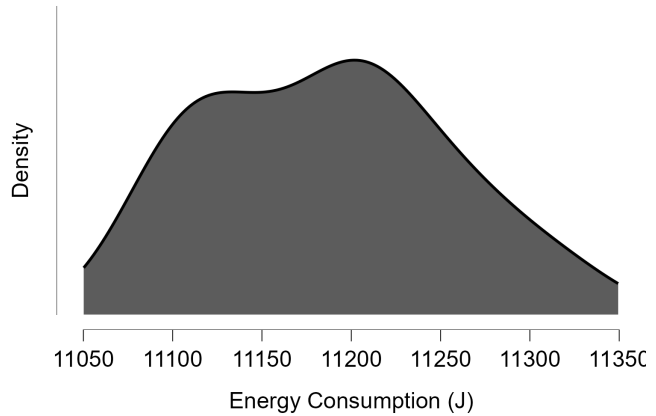
Density Plots

Energy Consumption (J)

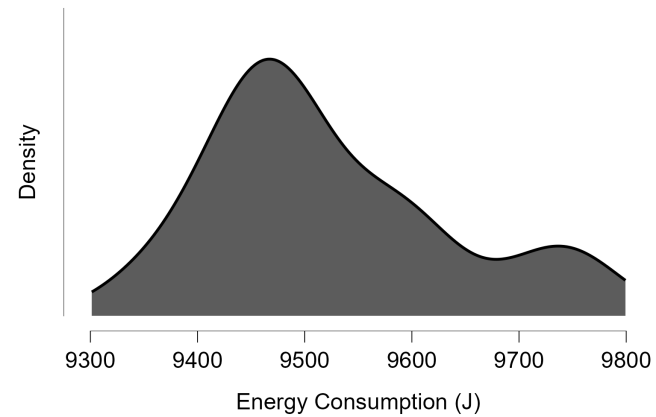
dynamosa-1337



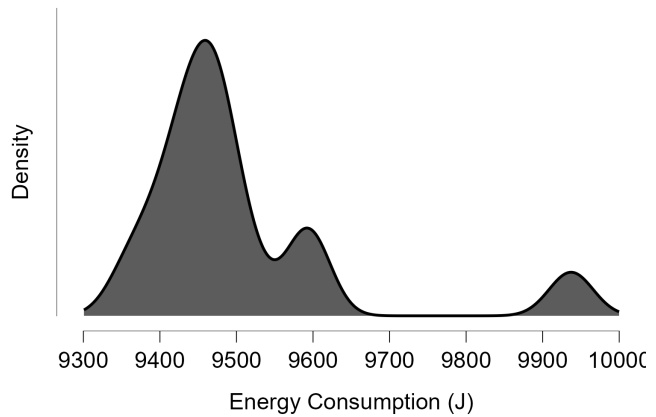
dynamosa-42



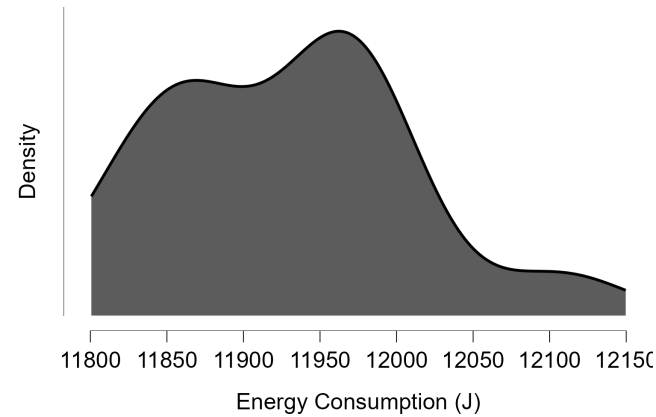
mio-1337



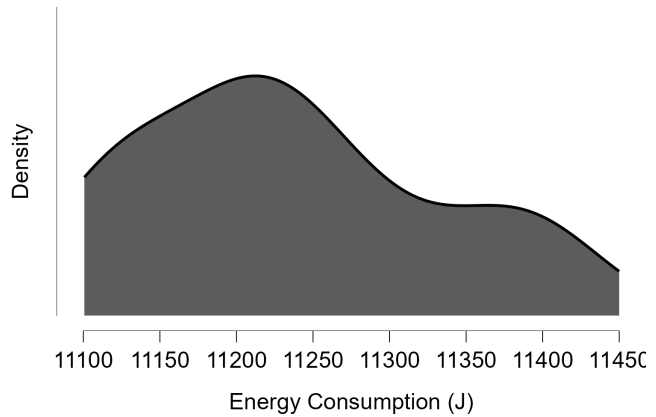
mio-42



mosa-1337

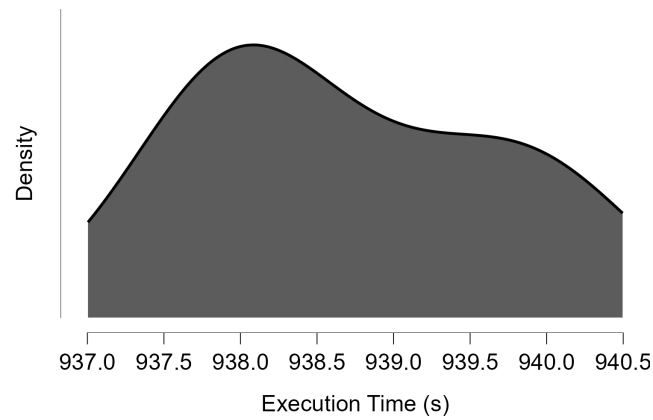


mosa-42

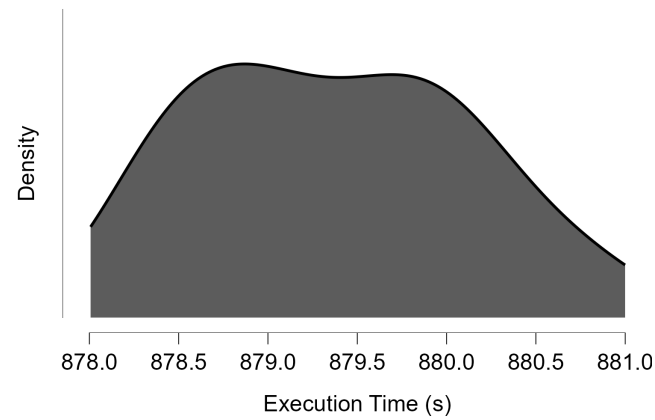


Execution Time (s)

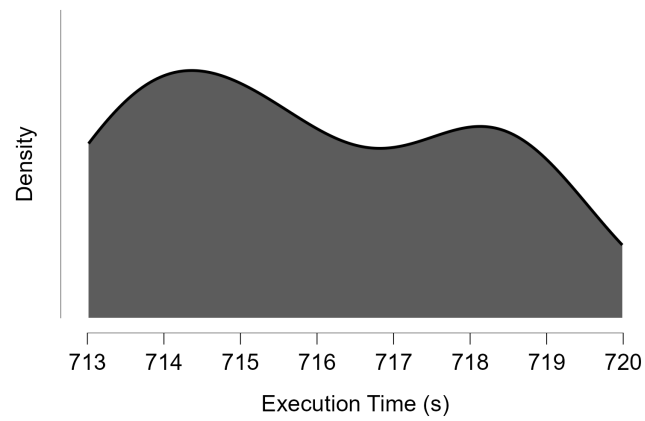
dynamosa-1337



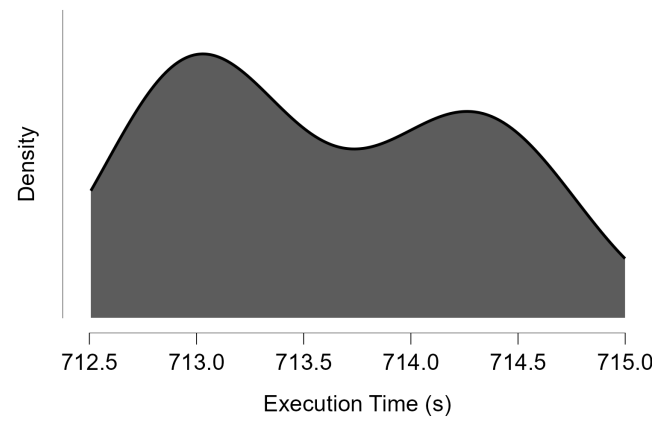
dynamosa-42



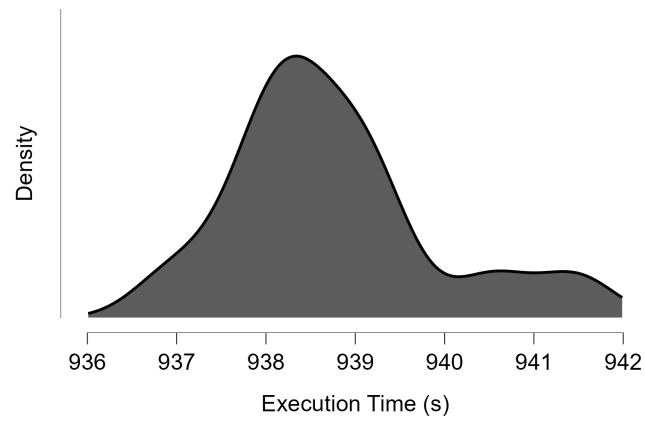
mio-1337



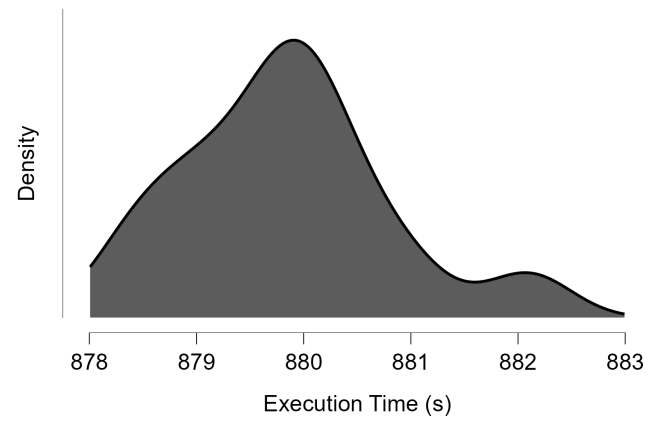
mio-42



mosa-1337

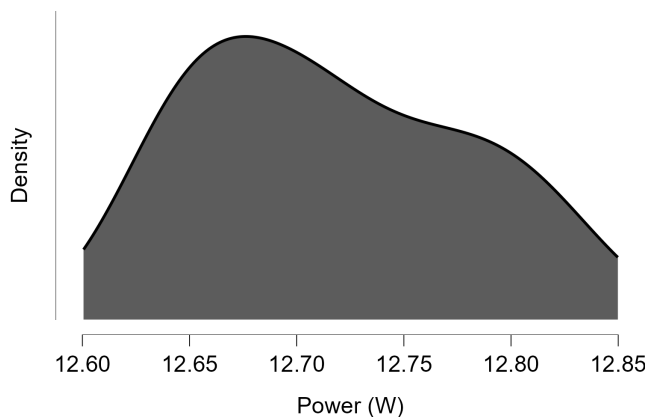


mosa-42

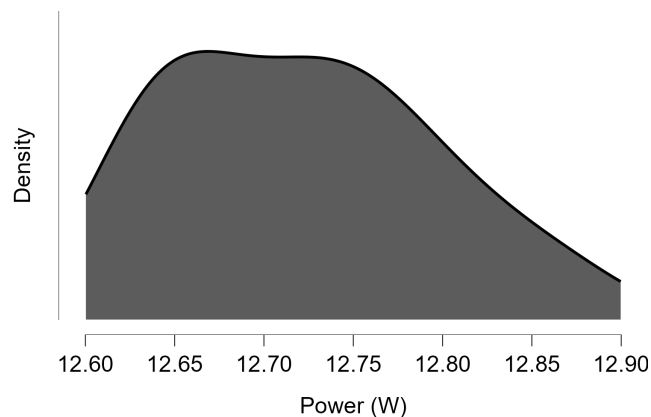


Power (W)

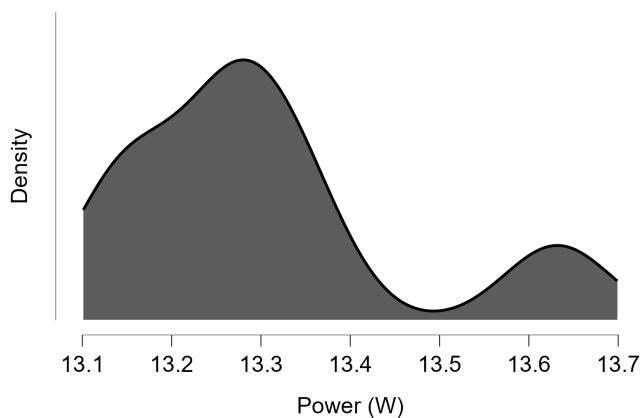
dynamosa-1337



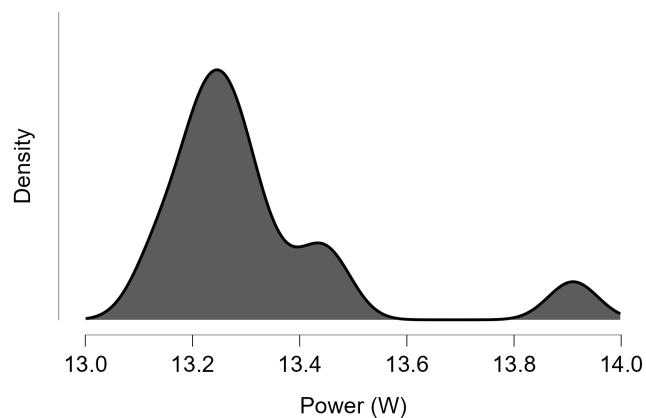
dynamosa-42



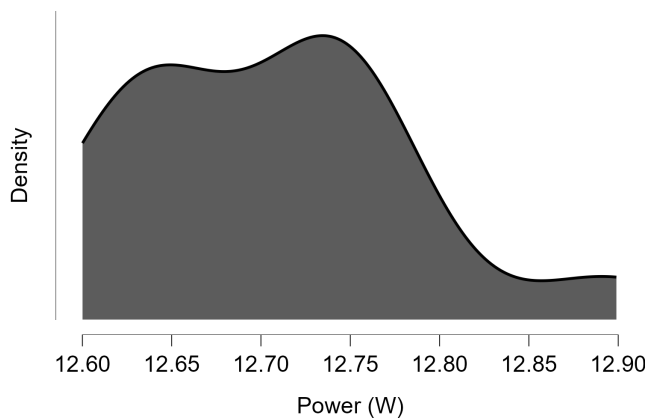
mio-1337



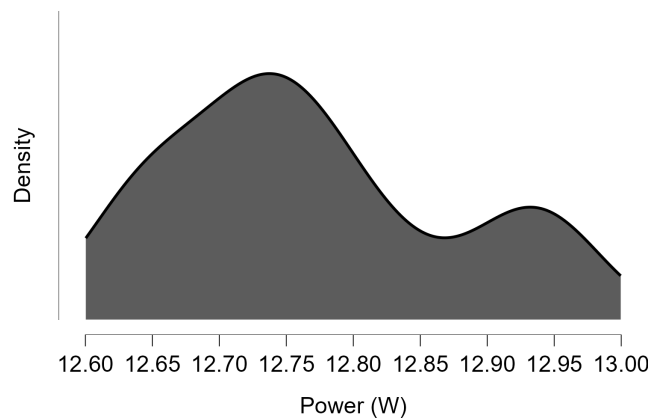
mio-42



mosa-1337



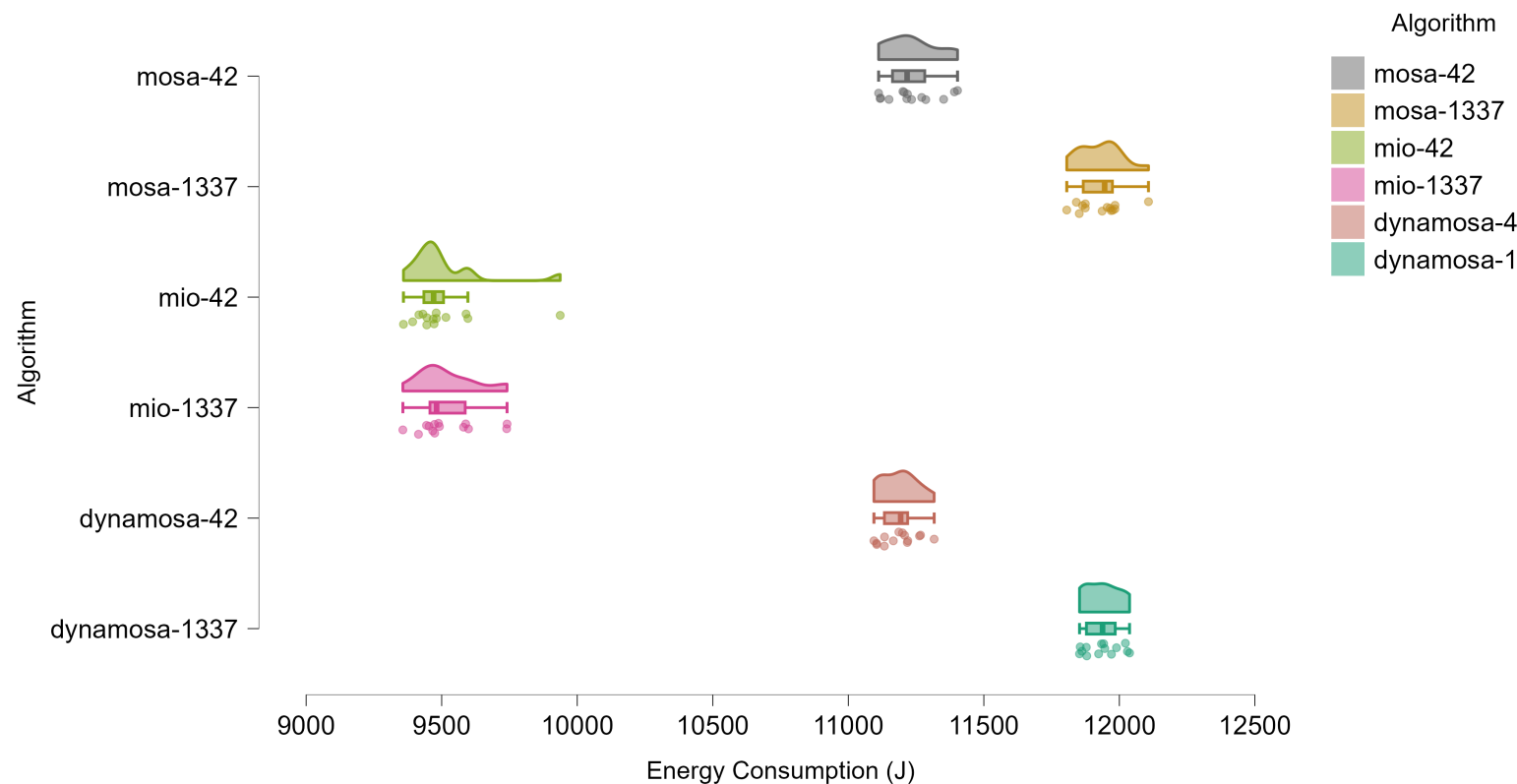
mosa-42



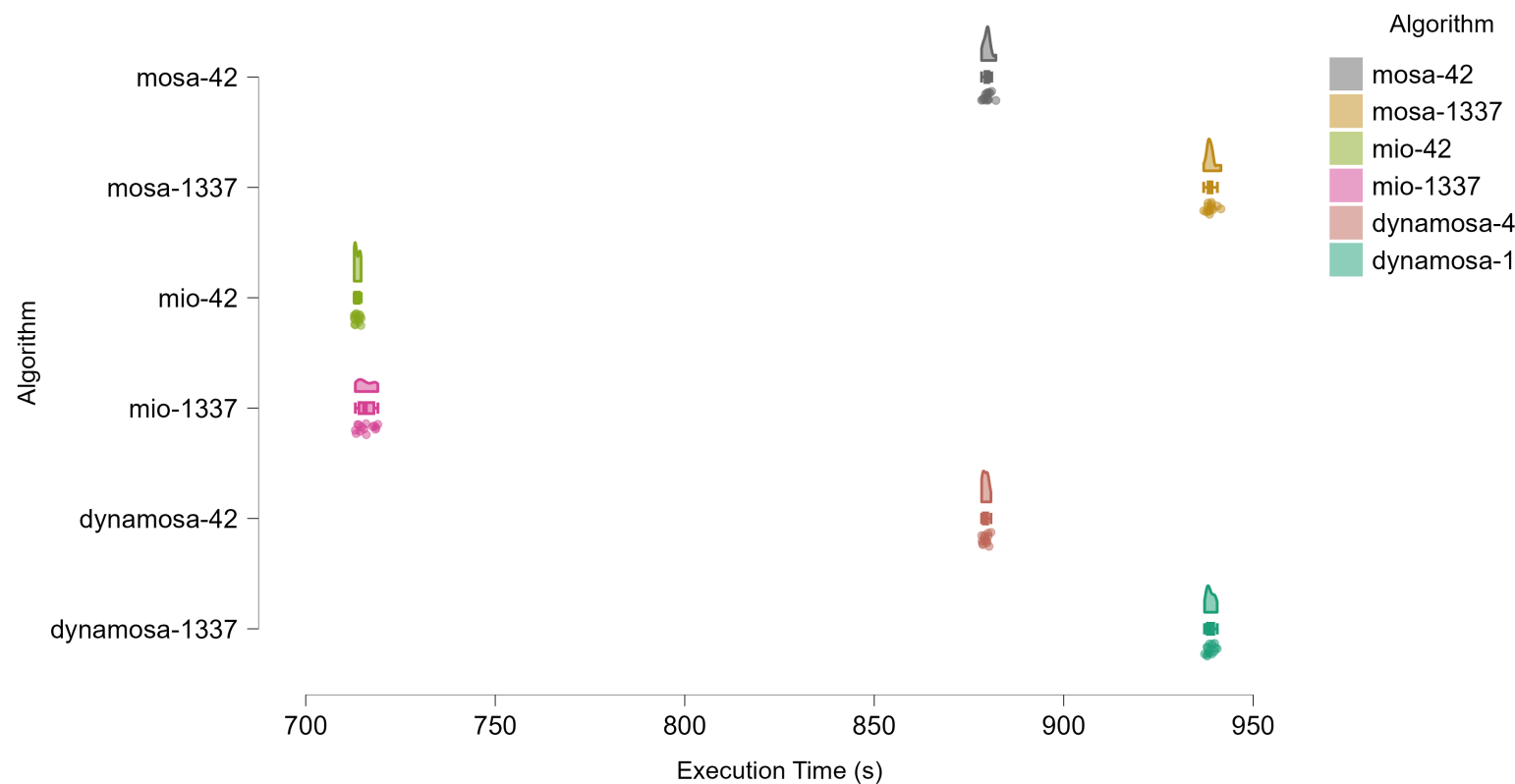
Copy of Raincloud Plots

Raincloud Plots

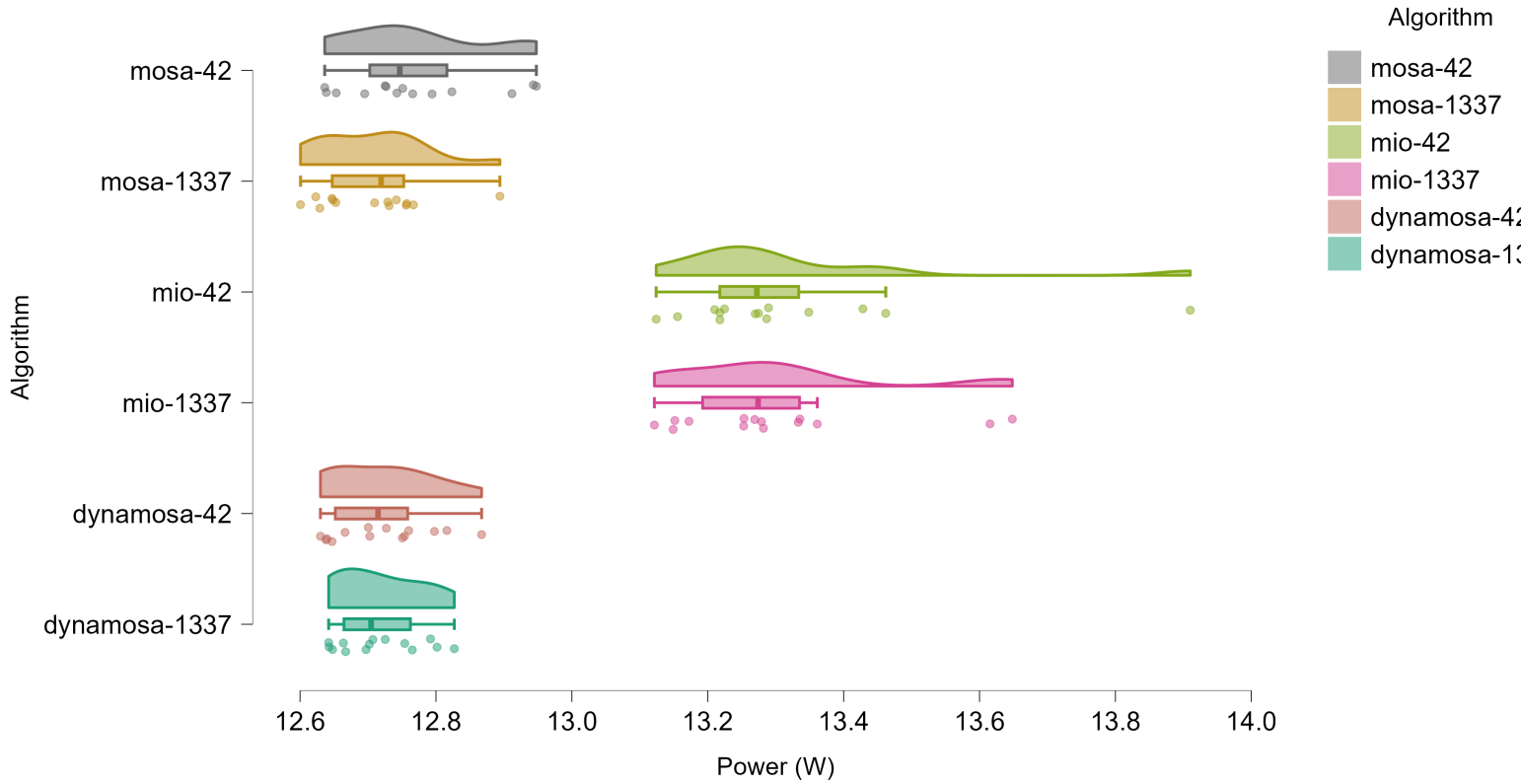
Energy Consumption (J)



Execution Time (s)



Power (W)



Statistics

Energy Consumption (J)

| Primary Factor | N  | Lower Whisker | 25th Percentile | Median    | 75th Percentile | Upper Whisker |
|----------------|----|---------------|-----------------|-----------|-----------------|---------------|
| dynamosa-1337  | 14 | 11853.011     | 11878.407       | 11937.967 | 11984.607       | 12037.625     |
| dynamosa-42    | 14 | 11094.595     | 11133.218       | 11193.146 | 11218.956       | 11316.699     |
| mio-1337       | 14 | 9356.721      | 9456.718        | 9481.232  | 9586.662        | 9741.174      |
| mio-42         | 14 | 9359.007      | 9434.372        | 9470.236  | 9506.837        | 9596.608      |
| mosa-1337      | 14 | 11805.906     | 11866.688       | 11945.622 | 11974.348       | 12107.446     |
| mosa-42        | 14 | 11111.766     | 11163.045       | 11216.925 | 11282.010       | 11402.919     |

Note.  $N_{\text{Total}} = 84$ .

Execution Time (s)

| Primary Factor | N  | Lower Whisker | 25th Percentile | Median  | 75th Percentile | Upper Whisker |
|----------------|----|---------------|-----------------|---------|-----------------|---------------|
| dynamosa-1337  | 14 | 937.154       | 937.867         | 938.447 | 939.567         | 940.487       |
| dynamosa-42    | 14 | 878.336       | 878.757         | 879.298 | 879.942         | 880.794       |
| mio-1337       | 14 | 713.084       | 714.049         | 715.627 | 717.978         | 719.027       |
| mio-42         | 14 | 712.785       | 712.947         | 713.432 | 714.171         | 714.619       |
| mosa-1337      | 14 | 936.927       | 938.057         | 938.475 | 939.132         | 940.532       |
| mosa-42        | 14 | 878.313       | 879.220         | 879.803 | 880.231         | 880.986       |

Note.  $N_{\text{Total}} = 84$ .

Power (W)

| Primary Factor | N  | Lower Whisker | 25th Percentile | Median | 75th Percentile | Upper Whisker |
|----------------|----|---------------|-----------------|--------|-----------------|---------------|
| dynamosa-1337  | 14 | 12.642        | 12.665          | 12.705 | 12.762          | 12.827        |
| dynamosa-42    | 14 | 12.630        | 12.652          | 12.715 | 12.758          | 12.867        |
| mio-1337       | 14 | 13.121        | 13.192          | 13.274 | 13.335          | 13.361        |
| mio-42         | 14 | 13.124        | 13.218          | 13.272 | 13.334          | 13.462        |
| mosa-1337      | 14 | 12.601        | 12.647          | 12.719 | 12.753          | 12.894        |
| mosa-42        | 14 | 12.636        | 12.703          | 12.747 | 12.816          | 12.948        |

Note.  $N_{\text{Total}} = 84$ .

ANOVA



| Cases     | Sum of Squares         | df | Mean Square            | F        | p      |
|-----------|------------------------|----|------------------------|----------|--------|
| Algorithm | 8.648×10 <sup>+7</sup> | 5  | 1.730×10 <sup>+7</sup> | 1798.326 | < .001 |
| Residuals | 750195.658             | 78 | 9617.893               |          |        |

Note. Type III Sum of Squares

Post Hoc Tests

Standard (HSD)

Post Hoc Comparisons - Algorithm

|                 |               | Mean Difference | SE     | df | t       | Ptukey    |
|-----------------|---------------|-----------------|--------|----|---------|-----------|
| (dynamosa-1337) | (dynamosa-42) | 750.694         | 37.067 | 78 | 20.252  | < .001*** |
|                 | (mio-1337)    | 2415.055        | 37.067 | 78 | 65.153  | < .001*** |
|                 | (mio-42)      | 2435.254        | 37.067 | 78 | 65.698  | < .001*** |
|                 | (mosa-1337)   | 9.495           | 37.067 | 78 | 0.256   | 1.000     |
|                 | (mosa-42)     | 703.336         | 37.067 | 78 | 18.975  | < .001*** |
| (dynamosa-42)   | (mio-1337)    | 1664.361        | 37.067 | 78 | 44.901  | < .001*** |
|                 | (mio-42)      | 1684.560        | 37.067 | 78 | 45.446  | < .001*** |
|                 | (mosa-1337)   | -741.199        | 37.067 | 78 | -19.996 | < .001*** |
|                 | (mosa-42)     | -47.358         | 37.067 | 78 | -1.278  | 0.796     |
| (mio-1337)      | (mio-42)      | 20.199          | 37.067 | 78 | 0.545   | 0.994     |
|                 | (mosa-1337)   | -2405.560       | 37.067 | 78 | -64.897 | < .001*** |
|                 | (mosa-42)     | -1711.719       | 37.067 | 78 | -46.179 | < .001*** |
| (mio-42)        | (mosa-1337)   | -2425.759       | 37.067 | 78 | -65.442 | < .001*** |
|                 | (mosa-42)     | -1731.918       | 37.067 | 78 | -46.724 | < .001*** |
| (mosa-1337)     | (mosa-42)     | 693.841         | 37.067 | 78 | 18.718  | < .001*** |

\*\*\* p < .001

Note. P-value adjusted for comparing a family of 6 estimates.

Letter-Based Grouping - Algorithm

| Algorithm     | Letter |
|---------------|--------|
| dynamosa-1337 | c      |
| dynamosa-42   | b      |
| mio-1337      | a      |
| mio-42        | a      |
| mosa-1337     | c      |
| mosa-42       | b      |

Note. If two or more means share the same grouping symbol, then we cannot show them to be different, but we also did not show them to be the same.

ANOVA

ANOVA - Execution Time (s)

| Cases     | Sum of Squares | df | Mean Square | F          | p      |
|-----------|----------------|----|-------------|------------|--------|
| Algorithm | 754626.841     | 5  | 150925.368  | 101945.825 | < .001 |
| Residuals | 115.475        | 78 | 1.480       |            |        |

Note. Type III Sum of Squares

Post Hoc Tests

Standard (HSD)

Post Hoc Comparisons - Algorithm

|                 |               | Mean Difference | SE    | df | t        | P <sub>Tukey</sub> |
|-----------------|---------------|-----------------|-------|----|----------|--------------------|
| (dynamosa-1337) | (dynamosa-42) | 59.333          | 0.460 | 78 | 129.018  | < .001***          |
|                 | (mio-1337)    | 222.836         | 0.460 | 78 | 484.550  | < .001***          |
|                 | (mio-42)      | 225.106         | 0.460 | 78 | 489.486  | < .001***          |
|                 | (mosa-1337)   | -0.036          | 0.460 | 78 | -0.078   | 1.000              |
|                 | (mosa-42)     | 58.865          | 0.460 | 78 | 128.000  | < .001***          |
|                 | (mio-1337)    | 163.503         | 0.460 | 78 | 355.532  | < .001***          |
| (dynamosa-42)   | (mio-42)      | 165.773         | 0.460 | 78 | 360.468  | < .001***          |
|                 | (mosa-1337)   | -59.369         | 0.460 | 78 | -129.096 | < .001***          |
|                 | (mosa-42)     | -0.468          | 0.460 | 78 | -1.018   | 0.911              |
|                 | (mio-42)      | 2.270           | 0.460 | 78 | 4.936    | < .001***          |
| (mio-1337)      | (mosa-1337)   | -222.872        | 0.460 | 78 | -484.628 | < .001***          |
|                 | (mosa-42)     | -163.971        | 0.460 | 78 | -356.550 | < .001***          |
| (mio-42)        | (mosa-1337)   | -225.142        | 0.460 | 78 | -489.564 | < .001***          |
|                 | (mosa-42)     | -166.241        | 0.460 | 78 | -361.486 | < .001***          |
| (mosa-1337)     | (mosa-42)     | 58.901          | 0.460 | 78 | 128.078  | < .001***          |

\*\*\* p < .001  
Note. P-value adjusted for comparing a family of 6 estimates.

Letter-Based Grouping - Algorithm

| Algorithm     | Letter |
|---------------|--------|
| dynamosa-1337 | d      |
| dynamosa-42   | c      |
| mio-1337      | b      |
| mio-42        | a      |
| mosa-1337     | d      |
| mosa-42       | c      |

Note. If two or more means share the same grouping symbol, then we cannot show them to be different, but we also did not show them to be the same.

ANOVA

ANOVA - Power (W)

| Cases     | Sum of Squares | df | Mean Square | F      | p      |
|-----------|----------------|----|-------------|--------|--------|
| Algorithm | 6.327          | 5  | 1.265       | 84.581 | < .001 |
| Residuals | 1.167          | 78 | 0.015       |        |        |

Note. Type III Sum of Squares

Post Hoc Tests

Standard (HSD)

Post Hoc Comparisons - Algorithm

|                 |               | Mean Difference | SE    | df | t       | P <sub>Tukey</sub> |
|-----------------|---------------|-----------------|-------|----|---------|--------------------|
| (dynamosa-1337) | (dynamosa-42) | −0.004          | 0.046 | 78 | −0.095  | 1.000              |
|                 | (mio-1337)    | −0.585          | 0.046 | 78 | −12.654 | < .001***          |
|                 | (mio-42)      | −0.599          | 0.046 | 78 | −12.955 | < .001***          |
|                 | (mosa-1337)   | 0.011           | 0.046 | 78 | 0.229   | 1.000              |
|                 | (mosa-42)     | −0.051          | 0.046 | 78 | −1.112  | 0.875              |
| (dynamosa-42)   | (mio-1337)    | −0.581          | 0.046 | 78 | −12.559 | < .001***          |
|                 | (mio-42)      | −0.595          | 0.046 | 78 | −12.861 | < .001***          |
|                 | (mosa-1337)   | 0.015           | 0.046 | 78 | 0.324   | 1.000              |
|                 | (mosa-42)     | −0.047          | 0.046 | 78 | −1.018  | 0.911              |
| (mio-1337)      | (mio-42)      | −0.014          | 0.046 | 78 | −0.301  | 1.000              |
|                 | (mosa-1337)   | 0.596           | 0.046 | 78 | 12.883  | < .001***          |
|                 | (mosa-42)     | 0.534           | 0.046 | 78 | 11.542  | < .001***          |
| (mio-42)        | (mosa-1337)   | 0.610           | 0.046 | 78 | 13.185  | < .001***          |
|                 | (mosa-42)     | 0.547           | 0.046 | 78 | 11.843  | < .001***          |
| (mosa-1337)     | (mosa-42)     | −0.062          | 0.046 | 78 | −1.342  | 0.761              |

\*\*\* p < .001  
Note. P-value adjusted for comparing a family of 6 estimates.

Letter-Based Grouping - Algorithm

| Algorithm     | Letter |
|---------------|--------|
| dynamosa-1337 | a      |
| dynamosa-42   | a      |
| mio-1337      | b      |
| mio-42        | b      |
| mosa-1337     | a      |
| mosa-42       | a      |

Note. If two or more means share the same grouping symbol, then we cannot show them to be different, but we also did not show them to be the same.

