Required Data:

|  |  |
| --- | --- |
| **Synergy Driven** | **Torque Driven** |
| IK File (.mot)  ID File (.mot)  GRF File (.mot)  Muscle Activations File (.sto)  Muscle Analysis Files (.sto)  Synergy Weights File (.sto)  Surrogate Model Coefficients File (.mat) \*  Surrogate Model File (.m) \*  Osimx File (.osimx)  Gpops Setting File (.xml) | IK File (.mot)  ID File (.mot)  GRF File (.mot)  Osimx File (.osimx)  Gpops Setting File (.xml) |
| \* Surrogate Model Creation Tool |  |

Optional Data:

|  |  |
| --- | --- |
| **Synergy Driven** | **Torque Driven** |
| States File (.sto)  Controls File (.sto)  Parameters File (.sto) | States File (.sto)  Controls File (.sto) |

Continuous Tracking Cost Terms: (continuous function)

|  |  |
| --- | --- |
| **Synergy Driven** | **Torque Driven** |
| Coordinates  Inverse Dynamic Moments  External Forces  External Moments  Muscle Activations | Coordinates  Inverse Dynamic Moments  External Forces  External Moments |

Continuous Minimizing Cost Terms: (continuous function)

|  |  |
| --- | --- |
| **Synergy Driven** | **Torque Driven** |
| Joint Jerk | Joint Jerk |

Path Constraint Terms: (continuous function)

|  |  |
| --- | --- |
| **Synergy Driven** | **Torque Driven** |
| Root Segment Residuals  Muscle Model Moment Consistency | Root Segment Residuals  Torque Model Moment Consistency |

Terminal Constraint Terms: (endpoint function)

|  |  |
| --- | --- |
| **Synergy Driven** | **Torque Driven** |
| State Position Periodicity  State Velocity Periodicity  Root Segment Periodicity  External Force Periodicity  External Moment Periodicity | State Position Periodicity  State Velocity Periodicity  Root Segment Periodicity  External Force Periodicity  External Moment Periodicity |