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| NAME | FUNCTION | INPUT | OUTPUT |
| Data\_processing.py | Functions to process Time, indexes and making list of parameters within two time limits. | UTC\_Seconds | Time processsing functions |
| Parameter Reader.py | Function to process the Thrust file.  -Function to obtain rho and T in for any hp.  -Organizes Geometry and Coefficients in classes and objects. | -Cit\_par.py Geometry | Thrust processing function. |
| DataReader.py | Reads Excel Post flight datasheer | PostFLIGHTexcel | 1&2 measurement sets variables in lists.  Eigenmotions start times. |
| readmat.py | Reads and flight data MAT file | MAT file | Arrays of all parameters recorded in flight. |
| Thrust.py | Needed for the thrust.exe which is read on the ParameterReader.py |  |  |
| ISAmodule.py | Computes density with altitude input | hp | rho |
| findCG.py | Computes the CG of the airplane in time.  Computes Mass of AC in time.  (Includes functions:  -find moment of people  -fuel weight in time  -fuel moment in time) | - Weights from DataReader  - dataprocessing.py | -Mass in time  -Cg in time |
| AerodynamicCoeff.py | Computes TAS from IAS  Computes array(CL), array (CD), CD0, e. | -array(hp)  -array(rho)  -geometry  -weight (findCG)  -thrust (parameter reader)  -GetAirspeeds(parameterreader) | CL, CD, CD0, e.  Plots of CL-alpha, CL-CD. |
| CMDelta.py | Computes Cm-de and Cm-alpha. | -Second Measurement set.  - Data\_processing.py  - GetAirspeeds | Cm-de  Cm-alpha |
| TimeIntervals.py | Defines begin and end time of each motions. | -Readmat  -dataprocessing (Time functions) | -startT, endT  -index of start in the UTC\_seconds list |
| Cit\_par.py | Stores coefficients of the state matrix and the input matrix of the state space system. | -TimeIntervals.py (of each Eigenmotion)  - Conditions (hp0, V0, alpha0, th0) at start.  - CD0, e, CLa  -Cma, Cmde | State and Input Matrix Parameters. |
| Numerical\_Sim.py | Makes the SS system for symmetric and asymmetric motions. | -ParameterReader (aircraft geometry)  -Coefficients from Cit\_par.py | Symmetric and Asymmetric State-space systems |
| TestDeflect.py | Adds input vector in the SS system;  Plots results against Validation plots. | -Numerical\_sim.py  -Input Values (from Cit\_par.py) | Simulated state matrix.  Validation plots. |