

```

function [ydot] = NumericJ2Prop(t,Y,mu)

%% % construct A matrix to be evaluated for each new state
% x = Y(1);
% y = Y(2);
% z = Y(3);
%
%% % define constants
% J2 = 0.00108248;
%
% a = 6378;
%
%% % this was evaluated previously and put in here
% accelcompWRTState(1,1) = (mu*(12*J2*a^2*x^4 + 9*J2*a^2*x^2*y^2 - 81*J2*a^2*x^2*z^2 - 3*J2*a^2*y^4 + 9*J2*a^2*y^2*z^2 + 12*J2*a^2*z^4 + 4*x^6 + 6*x^4*y^2 + 6*x^4*z
% accelcompWRTState(2,1) = (3*mu*x*y*(5*J2*a^2*x^2 + 5*J2*a^2*y^2 - 30*J2*a^2*z^2 + 2*x^4 + 4*x^2*y^2 + 4*x^2*z^2 + 2*y^4 + 4*y^2*z^2 + 2*z^4))/(2*(x^2 + y^2 + z^2)
% accelcompWRTState(3,1) = (3*mu*x*z*(15*J2*a^2*x^2 + 15*J2*a^2*y^2 - 20*J2*a^2*z^2 + 2*x^4 + 4*x^2*y^2 + 4*x^2*z^2 + 2*y^4 + 4*y^2*z^2 + 2*z^4))/(2*(x^2 + y^2 + z^
% accelcompWRTState(1,2) = (3*mu*x*y*(5*J2*a^2*x^2 + 5*J2*a^2*y^2 - 30*J2*a^2*z^2 + 2*x^4 + 4*x^2*y^2 + 4*x^2*z^2 + 2*y^4 + 4*y^2*z^2 + 2*z^4))/(2*(x^2 + y^2 + z^2)
% accelcompWRTState(2,2) = (mu*(- 3*J2*a^2*x^4 + 9*J2*a^2*x^2*y^2 + 9*J2*a^2*x^2*z^2 + 12*J2*a^2*y^4 - 81*J2*a^2*y^2*z^2 + 12*J2*a^2*z^4 - 2*x^6 - 6*x^4*z^2 + 6*x^2
% accelcompWRTState(3,2) = (3*mu*y*z*(15*J2*a^2*x^2 + 15*J2*a^2*y^2 - 20*J2*a^2*z^2 + 2*x^4 + 4*x^2*y^2 + 4*x^2*z^2 + 2*y^4 + 4*y^2*z^2 + 2*z^4))/(2*(x^2 + y^2 + z^
% accelcompWRTState(1,3) = (3*mu*x*z*(15*J2*a^2*x^2 + 15*J2*a^2*y^2 - 20*J2*a^2*z^2 + 2*x^4 + 4*x^2*y^2 + 4*x^2*z^2 + 2*y^4 + 4*y^2*z^2 + 2*z^4))/(2*(x^2 + y^2 + z^
% accelcompWRTState(2,3) = (3*mu*y*z*(15*J2*a^2*x^2 + 15*J2*a^2*y^2 - 20*J2*a^2*z^2 + 2*x^4 + 4*x^2*y^2 + 4*x^2*z^2 + 2*y^4 + 4*y^2*z^2 + 2*z^4))/(2*(x^2 + y^2 + z^
% accelcompWRTState(3,3) = -(mu*(9*J2*a^2*x^4 + 18*J2*a^2*x^2*y^2 - 72*J2*a^2*x^2*z^2 + 9*J2*a^2*y^4 - 72*J2*a^2*y^2*z^2 + 24*J2*a^2*z^4 + 2*x^6 + 6*x^4*y^2 + 6*x^2
% accelcompWRTState(1:3,4:6) = zeros(3,3);
%
%% % create matlab function to be evaluated
% A_func = matlabFunction(accelcompWRTState, 'Vars', {x, y, z, vx, vy, vz});
%
%% % current state is the Y vector
% currState = Y;
%
% A = [zeros(3,3), eye(3,3); ...
%      double(accelcompWRTState)];
%
%
% ydot = A * Y;

ydot = zeros(6,1);
ydot(1:3,1) = Y(4:6,1);
rmag = norm(Y(1:3,1));
rk = Y(3,1);
ri = Y(1,1);
rj = Y(2,1);
J2 = 0.00108248;
Re = 6378.1363;

apertx = -((mu*Y(1,1))/(norm(Y(1:3,1)))^3)*(1-J2*(3/2)*(Re/norm(Y(1:3,1)))^2*(5*(Y(3,1)/norm(Y(1:3,1)))^2-1));
aperty = -((mu*Y(2,1))/(norm(Y(1:3,1)))^3)*(1-J2*(3/2)*(Re/norm(Y(1:3,1)))^2*(5*(Y(3,1)/norm(Y(1:3,1)))^2-1));
apertz = -((mu*Y(3,1))/(norm(Y(1:3,1)))^3)*(1-J2*(3/2)*(Re/norm(Y(1:3,1)))^2*(5*(Y(3,1)/norm(Y(1:3,1)))^2-3));

ydot(4) = apertx;
ydot(5) = aperty;
ydot(6) = apertz;
end

```

Not enough input arguments.

Error in Utility.NumericJ2Prop (line 41)
ydot(1:3,1) = Y(4:6,1);

