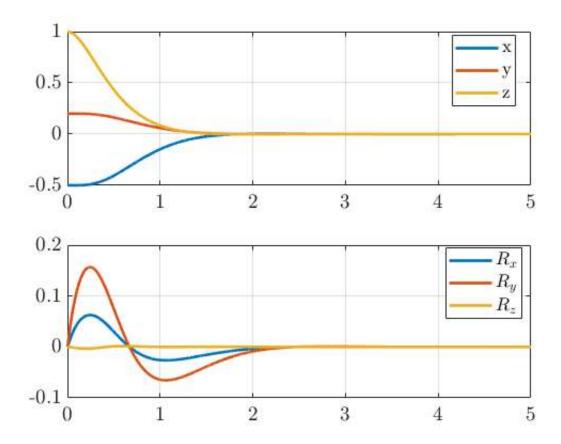
Quadcopter 3d

```
if (~exist('prettyup'))
 prettyup = true;
                                   % Should environment be cleared out?
                                   % Affects repeat runs. Set as you please.
end
if (prettyup)
                                   % If prettyup should be done, do so.
 clearEnv;
 prettyup = true;
                                   % otherwise, environment stays as is.
robo = quadcopter();
q = 10;
Q = blkdiag(q*eye(6), eye(6));
R = eye(4);
K = robo.getLinearGain(Q,R);
robo.setLinearGain(K);
g = 9.81;
u = Q(t,x) robo.param.m*g*[1.0101;1.0100;1.010;1.010]/4;
xref = @(t) zeros([12 1]);
u = @(t,x) robo.linearController(t,x,xref);
tspan = [0, 5];
[tSim, xSim, xdotSim, uSim] = robo.runSim(tspan, x0, u);
figure();
subplot(211);
plot(tSim,xSim(:,1:3));
legend('x','y','z');
subplot(212);
plot(tSim, xSim(:, 4:6));
legend("$R x$","$R y$","$R z$");
%ani = quadcopterAnimator(robo);
%ani.fig = figure(1); clf;
%ani.animate(tSim,xSim);
%figure(2);
%plot(tSim, transpose(uSim));
%legend({'$u 1$','$u 2$','$u 3$','$u 4$'}, 'Interpreter','latex');
%ani.fig = figure(3); clf;
%ani.animateInput(tSim,xSim,uSim);
```



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