1116-70-2633 **Alexander M Baez***, abmincorporated@gmail.com, **Carmen Caiseda**, ccaiseda@bayamon.inter.edu, **Padmanabhan Seshaiyer**, padhu@gmu.edu, **Nitin Nellanki**, nellanki@masonlive.gmu.edu, and **Byong Kwon**, bkwon1@masonlive.gmu.edu. *Simulation, visualization and control of quadcopters.*

At any given moment our world encounters challenging events that affect our natural resources, wild-life or human populations. Many companies, in their search for mitigating the impact of these events, have invested in the advancement of technology that will allow them to manage these assignments, including the development of more accurate UAVs (unmanned aerial vehicles). With the use of these vehicles wider perspectives and regions of our planet can be efficiently monitored at a safe distance. The moisture level of crops can be measured, water rafts can be delivered to people in distress at sea or an area can surveyed for suspects. These devices, being radio controlled or autonomous, have the great benefit of being maneuvered into difficult regions, but also demand faster response time in the job appointed. In our collaborative effort to improve the UAV's performance while airborne, we have undergone the task of investigating the flight dynamics of this machine. We have implemented the Newton-Euler equations of quadcopter flight into a MATLAB simulation and visualization with PD Control and conducted case studies on the stability of this UAV. (Received September 22, 2015)