## 1147-32-453 **John P. D'Angelo\*** (jpda@illinois.edu). A variational principle for the complex Monge-Ampere operator. Preliminary report.

We discuss generalizations of the following result proved several years ago by the author: if f is a proper polynomial mapping of degree m between balls (source dimension n), then the volume of the image of the ball under f is at most  $\frac{\pi^n m^n}{n!}$ . This inequality is sharp, and equality holds if and only if f is homogeneous. To generalize this result let  $\Omega$  be a domain with defining function r. Put

$$\Phi(F) = \int_{\Omega} \det(F_{z_j \overline{z}_k}) dV.$$

We study how  $\Phi$  changes when we replace F by G = F + gr for non-negative g. We provide a sufficient condition for  $\Phi(G) > \Phi(F)$ . (Received January 24, 2019)