

Meeting: 1003, Atlanta, Georgia, MAA CP F1, MAA Session on Mathlets for Teaching and Learning Mathematics

1003-F1-993 **Michael Dorff*** (mdorff@math.byu.edu), Department of Mathematics, Brigham Young University, Provo, UT 84604, and **Adam Rich** and **Jared Whitehead**. *Mathlet for Graphing Moebius Transformations in Complex Analysis*.

We have created a Java applet that helps students to visualize Moebius transformations, which are complex rational maps $T(z) = (az + b)/(cz + d)$, where $ad \neq bc$. A discussion of Möbius transformations, their properties, and the image of various domains in the complex plane under T are standard topics in an undergraduate complex variables course. The applet allows the user to input any Moebius transformations (even ones with singularities) and choose a domain from a set of options (i.e., a point, line, half plane, circle, disk). The user positions his domain in a copy of the complex plane on the left side of the screen and then the applet creates the corresponding image on a second copy of the complex plane on the right side of the screen. The applet allows to user to clear the images after each drawing or to keep the images permitting the user to see intersections of domains. (Received October 01, 2004)