1145-47-441 **Bryan Goldberg*** (bgoldberg@albany.edu), bgoldberg@albany.edu, and **Rongwei Yang**.

Complex Dynamics on the Projective Spectrum of the Infinite Dihedral Group.

Using the self-similarity of the infinite dihedral group (D_∞) in *Joint Spectrum and the Infinite Dihedral Group*, Grigorchuk and Yang defined a mapping $F : \mathbb{C}^3 \to \mathbb{C}^3$ where $F(z) = \big(z_0(z_0^2 - z_1^2 - z_2^2), z_1^2 z_2, z_2(z_0^2 - z_2^2)\big)$. After establishing some background on $F(z)$ we'll use complex dynamics to establish some properties of this mapping. We'll use equivalent projective space and look at $F : \mathbb{P}^2 \to \mathbb{P}^2$ to discuss some results including the Fatou and Julia sets of $F(z)$ restricted to the projective spectrum. We'll conclude by examing connections between spectral theory and dynamics in this particular situation. This is joint work with Rongwei Yang. (Received September 20, 2018)