

Algebraic Geometry Seminar

The locus of post-critically finite maps in the moduli space of self-maps of \mathbb{P}^n

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Abstract: A degree $d > 1$ self-map f of \mathbb{P}^n is called post critically finite (PCF) if its critical hypersurface C_f is pre-periodic for f , that is, if there exist integers $r \geq 0$ and $k > 0$ such that $f^{r+k}(C_f)$ is contained in $f^r(C_f)$.

I will discuss the question: what does the locus of PCF maps look like as a subset of the moduli space of degree d self-maps on \mathbb{P}^n ? I'll give a survey of many known results and some conjectures in dimension 1 (i.e. for $n = 1$). I'll then present a result, joint with Joseph H. Silverman and Patrick Ingram, that suggests that in dimensions two or greater, PCF maps are comparatively scarce in the moduli space of all self-maps.

Monday, November 2 at 4:00 PM in Zoom