Dynamics of Asymptotically Holomorphic Polynomial-like Maps

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In this talk we will discuss the dynamics of certain maps in the complex plane that arise naturally as deep renormalizations of asymptotically holomorphic extensions of C^r unimodal maps (with $r > 3$). The maps we investigate are infinitely renormalizable of bounded type. We establish C^2 a-priori bounds for such such maps. We also prove a version of the Fatou-Julia-Sullivan theorem and a topological straightening theorem in this setting. In particular, these maps do not have wandering domains and their Julia sets are locally connected. The talk is based on joint work with Trevor Clark and Sebastian van Strien.