A landing theorem for hairs and dreadlocks of entire functions with bounded post-singular sets

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The *Douady-Hubbard landing theorem* for periodic external rays is one of the cornerstones of the successful study of polynomial dynamics. It states that, for a complex polynomial f with bounded postcritical set, every periodic external ray lands at a repelling or parabolic periodic point, and conversely every repelling or parabolic point is the landing point of at least one periodic external ray.

We prove an analogue of the theorem for entire functions with bounded postsingular set. If such f additionally has finite order of growth, then our result states precisely that every periodic hair of f lands at a repelling or parabolic point, and again conversely every repelling or parabolic point is the landing point of at least one periodic hair. (Here a *periodic hair* is a curve consisting of escaping points of f that is invariant under an iterate of f.) For general f with bounded postsingular set, but not necessarily of finite order, the role of hairs is taken by more general connected sets of escaping sets, which we call *dreadlocks*.