Distortion sequences of entire functions with wandering domains

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Given a periodic orbit of a holomorphic map, the idea of relating its multiplier to the local dynamics of the map goes back to the nineteenth century. In the dynamical plane, it has led to many insights into the internal dynamics of periodic Fatou components. In the parameter plane, understanding how the multiplier changes can tell us many things about the structural stability and possible deformations of the map.

A wandering domain, however, has no periodic orbits, and though the possible internal dynamics can be classified through hyperbolic geometry, the corresponding parameter analysis has not been done. In this talk, we introduce distortion sequences of a wandering domain, an analogue of the multiplier of a periodic orbit, and show how it can (under certain hypotheses) be used to define a Banach-space-valued holomorphic map that functions as a multiplier map. Then, we will use quasiconformal surgery to discuss how to satisfy the aforementioned hypotheses.