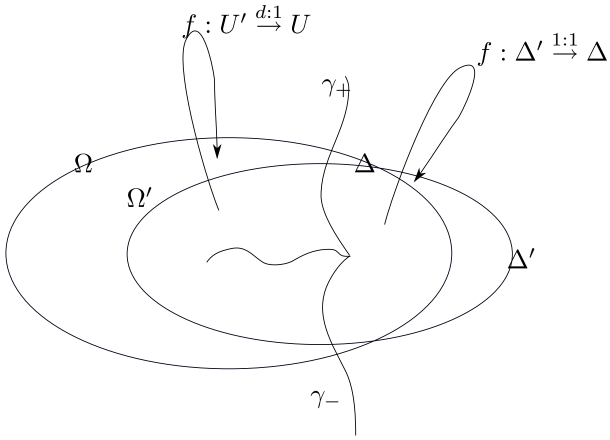
Parabolic-like mappings is a pun on the well known hyperbolic counter part polynomial-like mappings. A polynomial-like map of degree d is a triple (f, U', U) where U', U are open subsets of $\mathbb{C}$, $U', U \approx \mathbb{D}$, $U' \subseteq U$, and $f : U' \to U$ is a proper holomorphic map of degree d.

A polynomial-like mapping of degree d is naturally characterized by two disjoint sub-dynamical systems called the internal class and external class of the mapping. The external class can in appropriate coordinates be viewed as a degree d real-analytic orientation preserving and strongly expanding (hence hyperbolic) covering of the unit circle by itself.

A parabolic-like mapping is similar, but with the external class parabolic, i.e. with (a) parabolic orbit(s) and thus only weakly expanding.



Definition 0.1. (Parabolic-like maps) A parabolic-like map of degree d is a triple (f, U', U) where

- U', U are open subsets of $\mathbb{C}$, $U' \approx U \approx U \cup U' \approx \mathbb{D}$, $U' \nsubseteq U$,
- $f : U' \to U$ is a proper holomorphic map of degree d
- there exist $\gamma_\pm : [0,1] \to U$, $\gamma_\pm$ forward invariant under f:

$$f(\gamma_\pm(t)) = \gamma_\pm(dt) \;\; \forall 0 \leq t \leq \frac{1}{d}$$

- $\gamma_+ \cup \gamma_-$ divides U', U into Ω', Δ' and Ω, Δ respectively. These sets are such that Ω' is compactly contained in U, $\Omega' \subset \Omega$, $\Delta' \cap \Delta \neq \emptyset$ and $f : \Delta' \to \Delta$ is an isomorphism.