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Exponential Laminations

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Abstract: Laminations have proved useful in proving facts about polynomial Julia sets. We describe a process by which to construct laminations for certain exponential Julia sets. When there is an attracting fixed point, the exponential Julia set is a Cantor bouquet, a union of “hairs,” half-lines extending from infinity into the complex plane, parallel, more or less, to the positive real axis. We will consider those Julia sets where there is an attracting periodic orbit in the dynamics, and hairs are identified at a single repelling fixed point, as opposed to multiple repelling fixed points or repelling periodic points. This construction will make use of known facts about the complex exponential function and an itinerary system similar to those used in polynomial laminations.