

# ON THE ESCAPING SET OF EXPONENTIAL MAPS

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Consider the family

$$f_a : \mathbb{C} \rightarrow \mathbb{C}, f_a(z) = e^z + a, a \in \mathbb{C}.$$

Depending on the parameter  $a$  one may ask, which topological behaviour can be expected for the escaping set  $\mathcal{I}(f_a)$  of  $f_a$ . We show, following an article of Lasse Rempe-Gillen, that for real parameters  $a \in (-1, \infty)$  the escaping set  $\mathcal{I}(f_a)$  is connected. To show this, we construct a dense and connected subset of the escaping set and use some properties of the Julia set of  $f_a$ .

For the second part we consider the general case  $a \in \mathbb{C}$ . Here we show that if  $a \in \mathcal{I}(f_a)$  or if  $a \in \mathcal{J}(f_a) \setminus \mathcal{I}(f_a)$  is accessible with non periodic kneading sequence, then  $\mathcal{I}(f_a)$  is a connected subset of  $\mathbb{C}$ .