

# Continuous reducibility is a well-quasi-order on continuous functions with Polish 0-dimensional domains

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Given topological spaces  $X, X', Y, Y'$ , and two functions  $f : X \rightarrow Y$  and  $f' : X' \rightarrow Y'$ , we say that  $f$  reduces continuously to  $f'$  when there is a pair  $(\sigma, \tau)$  of continuous functions such that  $f = \tau \circ f' \circ \sigma$ .

This quasi-order has first been introduced by Weihrauch in the context of Computable Analysis at the beginning of the 1990s. It has recently received interest in Descriptive Set Theory.

With Yann Pequignot, we proved that on the class of continuous functions with Polish 0-dimensional domains, there are no infinite antichains and no infinite strictly descending chains for continuous reducibility. In other words, continuous reducibility is a well-quasi-order on this class of functions.

I will give some context for this result and outline the proof.

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