

# ON SUPERCYCLIC COMPOSITION OPERATOR

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ABSTRACT. Let  $E \hookrightarrow (C(X), \tau_p)$  be a Fréchet space, where  $X$  is a locally compact topological space, and let  $\varphi : X \rightarrow X$  a symbol, i.e. a function such that  $e \circ \varphi \in E$  for all  $e \in E$ . We study when  $C_\varphi$  is supercyclic in  $E$ ,  $(E, \omega)$  or  $(E, \tau_p)$ . We obtain the following results:

- (1) No composition operator  $C_\varphi$  is supercyclic in  $(A(\mathbb{D}), \tau_p)$ .
- (2) No composition operator  $C_\varphi$  is supercyclic in  $(H(\mathbb{D}) \setminus \{0\}, \omega)$  or in  $H(\mathbb{C} \setminus \{0\}, \omega)$ .
- (3) For any  $m \in \mathbb{N}$ , a composition operator  $C_\varphi$  in  $C^m(\mathbb{R})$  is weakly supercyclic if and only if it is mixing.
- (4) A composition operator  $C_\varphi$  in  $C(\mathbb{R})$  is supercyclic if and only if it is mixing.

The results 1. and 2 belong to a joint work with M. J. Beltrán-Meneu and M. Murillo-Arcila, and 3 and 4 to a joint work with A. A. Albanese and C.Mele.