

**Bonino, Marc**

**Lefschetz index for orientation reversing planar homeomorphisms.** (English) Zbl 0986.55003  
Proc. Am. Math. Soc. 130, No. 7, 2173-2177 (2002).

*M. Brown* [ibid. 108, No. 4, 1109-1114 (1990; [Zbl 0686.58028](#))] proved that each integer occurs as the local fixed point index at the origin of an orientation preserving plane local homeomorphism. On the other hand, Brown [loc. cit.] stated without proof that in the orientation reversing case only  $-1$ ,  $0$ , and  $1$  are possible. Drawing heavily on ideas of *P. Le Calvez* and *J. C. Yoccoz* [Ann. Math. (2) 146, No. 2, 241-293 (1997; [Zbl 0895.58032](#))] the present author proves just this result. To be precise, he shows the following: Let  $V, W$  be two open connected neighbourhoods of  $0$  in  $\mathbb{R}^2$  and let  $h : V \rightarrow W$  be an orientation reversing homeomorphism which possesses  $0$  as an isolated fixed point. Then  $\text{ind}(h, 0) \in \{-1, 0, 1\}$ .

Reviewer: [Christian Fenske \(Gießen\)](#)

**MSC:**

[55M20](#) Fixed points and coincidences in algebraic topology  
[54H25](#) Fixed-point and coincidence theorems (topological aspects)

Cited in **8** Documents

**Keywords:**

[planar homeomorphism](#); [fixed point index](#)

**Full Text:** [DOI](#)

**References:**

- [1] Morton Brown, On the fixed point index of iterates of planar homeomorphisms, Proc. Amer. Math. Soc. 108 (1990), no. 4, 1109 – 1114. · [Zbl 0686.58028](#) ·
- [2] Patrice Le Calvez and Jean-Christophe Yoccoz, Un théorème d'indice pour les homéomorphismes du plan au voisinage d'un point fixe, Ann. of Math. (2) 146 (1997), no. 2, 241 – 293 (French, with English summary). · [Zbl 0895.58032](#) · [doi:10.2307/2952463](#) · [doi.org](#)

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