A NEW PROOF THAT 4-CONNECTED PLANAR GRAPHS ARE HAMILTONIAN-CONNECTED

Xiaoyun Lu

Center for Statistical Research and Methodology
Census Bureau, Suitland, MD

e-mail: xiaoyun.lu@census.gov

and

Douglas B. West[1]

Zhejiang Normal University, Jinhua, China
and University of Illinois, Urbana, IL

e-mail: dwest@math.uiuc.edu

Abstract

We prove a theorem guaranteeing special paths of faces in 2-connected plane graphs. As a corollary, we obtain a new proof of Thomassen's theorem that every 4-connected planar graph is Hamiltonian-connected.

Keywords: 4-connected planar graph, Hamiltonian-connected, Tutte-path.

2010 Mathematics Subject Classification: 05C10, 05C45.

References

[1] C. Thomassen, *A theorem on paths in planar graphs*, J. Graph Theory **7** (1983) 169–176.
doi:10.1002/jgt.3190070205

[2] W.T. Tutte, *A theorem on planar graphs*, Trans. Amer. Math. Soc. **82** (1956) 99–116.
doi:10.1090/S0002-9947-1956-0081471-8

[3] H. Whitney, *A theorem on graphs*, Ann. of Math. **32** (1931) 378–390.
doi:10.2307/1968197