Casson, Andrew J.; **Bleiler, Steven A.**
Automorphisms of surfaces after Nielsen and Thurston. (English) ⎡Zbl 0649.57008⎤
London Mathematical Society Student Texts, 9. Cambridge (UK) etc.: Cambridge University Press. 105 p. hbk: £20.00; $ 34.50; pbk: £7.50; $ 12.95 (1988).

This Student Text is taken from notes of a course given by the first- named author at the University of Texas in 1982-83. It gives an exposition of part of Thurston's reworking and extension of Nielsen's classic work on the structure and dynamics of diffeomorphisms of 2- manifolds.

Great care is taken to make the work accessible to students. The needed facts from 2-dimensional hyperbolic geometry are developed economically from first principles. Hyperbolic structures on surfaces are defined and their closed geodesics investigated, leading to the definition of geodesic laminations. Advanced techniques are avoided; for example, the projective tangent bundle is defined to be the space of all pairs (x, σ) where σ is a closed unoriented geodesic segment of length 2 centered at x. Enough structure theory for geodesic laminations is developed to prove the main results: the existence of the stable and unstable laminations and singular measured foliations for an irreducible nonperiodic homeomorphism of a surface. A very bright undergraduate should be able to work through these notes, although there mayng.

MSC:

57N05	Topology of the Euclidean 2-space, 2-manifolds (MSC2010)	Cited in **2** Reviews
57-02	Research exposition (monographs, survey articles) pertaining to manifolds and cell complexes	Cited in **190** Documents
57R50	Differential topological aspects of diffeomorphisms	
37D99	Dynamical systems with hyperbolic behavior	
51M10	Hyperbolic and elliptic geometries (general) and generalizations	

Keywords:

pseudo Anosov diffeomorphism; diffeomorphisms of 2-manifolds; 2- dimensional hyperbolic geometry; Hyperbolic structures on surfaces; closed geodesics; geodesic laminations; measured foliations; irreducible nonperiodic homeomorphism of a surface