

**Labesse, Jean-Pierre**

**Cohomology, stabilization and base change. (Cohomologie, stabilisation et changement de base. Avec la collaboration de Lawrence Breen et Laurent Clozel.)** (French) [Zbl 1024.11034](#)  
*Astérisque*. 257. Paris: Société Mathématique de France, 161 p. (1999).

From the abstract: “The authors introduce the concept of a “crossed set” (generating the notion of a crossed module) and study the Galois cohomology of these objects. This is crucially used in the stabilisation of all elliptic terms in the twisted trace formula. The authors then prove the existence of stable transfer for cyclic base change.”

In the first chapter preliminaries on Galois cohomology with values in crossed sets, and relations with abelianized Galois cohomology (Breen, Borovoi, Deligne, Kottwitz) are given. In the second chapter he studies stable conjugacy, orbital integrals and relations with norm maps. In Chapter 3 the local transfer is determined in several cases, and finally in Chapter 4 the stabilization of the trace formula is exposed with applications. Two appendices (the first one co-authored by L. Clozel) give a corrected proof of an earlier result of Clozel concerning that for certain unitary groups, one can lift a given automorphic representation by base change and (the second one, written by L. Breen) crossed sets are given in a simplicial algebra framework.

Reviewer: [Tyakal Venkataramana \(Bombay\)](#)

**MSC:**

- 11F70** Representation-theoretic methods; automorphic representations over local and global fields
- 22E55** Representations of Lie and linear algebraic groups over global fields and adèle rings
- 18G30** Simplicial sets; simplicial objects in a category (MSC2010)
- 11-02** Research exposition (monographs, survey articles) pertaining to number theory

Cited in **3** Reviews  
Cited in **24** Documents

**Keywords:**

crossed set; Galois cohomology; twisted trace formula; existence of stable transfer; cyclic base change; abelianized Galois cohomology; stable conjugacy; orbital integrals; norm maps; local transfer