

Haines, Thomas (ed.); Harris, Michael (ed.)

Shimura varieties. (English) [[Zbl 1435.14004](#)]

London Mathematical Society Lecture Note Series 457. Cambridge: Cambridge University Press (ISBN 978-1-108-70486-1/pbk; 978-1-108-64971-1/ebook). iii, 333 p. (2020).

Publisher's description: This is the second volume of a series of mainly expository articles on the arithmetic theory of automorphic forms. It forms a sequel to *L. Clozel* (ed.) et al. [Stabilization of the trace formula, Shimura varieties, and arithmetic applications. Volume 1: On the stabilization of the trace formula. Somerville, MA: International Press (2011; [Zbl 1255.11027](#))]. The books are intended primarily for two groups of readers: those interested in the structure of automorphic forms on reductive groups over number fields, and specifically in qualitative information on multiplicities of automorphic representations; and those interested in the classification of I -adic representations of Galois groups of number fields. Langlands' conjectures elaborate on the notion that these two problems overlap considerably. These volumes present convincing evidence supporting this, clearly and succinctly enough that readers can pass with minimal effort between the two points of view. Over a decade's worth of progress toward the stabilization of the Arthur-Selberg trace formula, culminating in Ngo Bau Chau's proof of the Fundamental Lemma, makes this series timely.

- Systematically develops the Langlands-Kottwitz method for Shimura varieties through the important example of unitary groups
- Constructs Galois representations attached to automorphic representations of $GL(n)$
- Includes several surveys of contemporary developments as well as original research

The articles of this volume will be reviewed individually.

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MSC:

- 14-06** Proceedings, conferences, collections, etc. pertaining to algebraic geometry
- 11-06** Proceedings, conferences, collections, etc. pertaining to number theory
- 14G35** Modular and Shimura varieties
- 11G18** Arithmetic aspects of modular and Shimura varieties
- 00B15** Collections of articles of miscellaneous specific interest

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