

AN ALTERNATIVE PROOF FOR A LEMMA USED IN THE TRACE  
FORMULA FOR  $GL(2)$  OVER A NUMBER FIELD

Rukiye OZTURK<sup>1</sup>, Ali AYDOGDU<sup>2</sup>, Engin OZKAN<sup>3</sup>

<sup>1,2</sup>*Ataturk University, Erzurum, TURKEY*

<sup>3</sup>*Erzincan University, Erzincan, TURKEY*

**MSC 2000:** 11F72

## Abstract

In this note, we give an alternative proof for a particular part of the lemma given in [3] (p. 201, Lemma 9.9) and which is used in [4] (p. 234, Lemma 6.5).

**Keywords:**  $GL(2)$ , symmetric square, trace formula, number field.

## References

- [1] A. Aydogdu, Y.Z. Flicker, E.Ozkan and R.Ozturk, Explicit forms of the trace formula for  $GL(2)$ , *J. Anal. Math.* (to appear).
- [2] S. Lang, Algebraic number theory, *Springer* (1994).
- [3] S. Gelbart, Automorphic forms on adèle groups, *Princeton University Press* (1975).
- [4] S. Gelbart and H. Jacquet, Forms of  $GL(2)$  from the analytic point of view, *Proc. Sympos. Pure. Math.* 33 part 1 (1979).
- [5] W. Narkiewichz, Elementary and analytic theory of algebraic numbers, *Springer-Verlag* (1990).

---

<sup>1</sup>First Author's e-mail: rukiyeozturk@atauni.edu.tr

<sup>2</sup>Second Author's e-mail: aydogduali84@gmail.com

<sup>3</sup>Third Author's e-mail: eozkan@erzincan.edu.tr