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Avner Ash* (ashav@bc.edu), Department of Mathematics, Boston College, Chestnut Hill, MA 02467. *Cuspidal Cohomology for $GL(3)$* . Preliminary report.

A cohomology class of an arithmetic subgroup of $GL(3, \mathbb{Z})$ with coefficients in a finite dimensional rational representation of $GL(3, \mathbb{C})$ is called cuspidal if it can be represented by a cuspidal closed differential form on the associated locally symmetric space. I give a survey of what is known about the existence and arithmetic properties of such classes, together with some conjectures. (Received July 02, 2006)