

Mathematics Colloquium

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# The Local Trace Formula

*Abstract: Arthur has developed a local trace formula for a  $p$ -adic group  $G$  that addresses the representation of  $G \times G$  on the space of  $L^2$  functions on  $G^{diag} \backslash G \times G$  defined by*

$$(R(y)\phi)(x) = \phi(xy), \quad \phi \in L^2(G^{diag} \backslash G \times G).$$

*For more general symmetric spaces, however, Arthur's development appears to be impossible without an explicit Plancherel formula for  $p$ -adic reductive symmetric spaces. For Lie algebras, however, one may avoid this particular difficulty, and it is possible to give an explicit generalization in many cases. In this colloquium, we discuss some background and two low rank examples.*

**Wednesday, October 7**

**4:00-5:00 pm**  
**204 Smith Hall**