

1038-53-302

Jean-Francois Lafont* (jlafont@math.ohio-state.edu), Department of Mathematics, The Ohio State University, 231 West 18th Avenue, Columbus, OH 43210-1174, and **Benjamin Schmidt** (schmidt@math.uchicago.edu), Department of Mathematics, University of Chicago, 5734 South University Ave., Chicago, IL 60637. *Totally geodesic submanifolds in locally symmetric spaces of non-compact type.*

Given a connected, totally geodesic submanifold Y inside a compact locally symmetric space of non-compact type X , we provide a condition that ensures that Y is homologically non-trivial in X . In low dimensions (relative to the dimension of X), our sufficient condition is also necessary. We provide conditions under which there exist a tangential map of pairs from a finite cover of the pair (X, Y) to the non-negatively curved dual pair of spaces. (Received February 12, 2008)