1018-37-136 **Y. Yomdin*** (yosef.yomdin@weizmann.ac.il), Department of Mathematics, The Weizmann Institute of Science, 76100 Rehovot, Israel. *Analytic reparametrization of semialgebraic sets and local entropy bounds.*

In many problems in Analysis and Dynamics it is important to subdivide objects under consideration into simple pieces, keeping control of high order derivatives. Semi-algebraic sets A inside the unit ball allow for C^k - triangulations, where each simplex is represented as an image, under the "reparametrization mapping" ψ, of the standard simplex, with all the derivatives of ψ up to order k bounded by 1, and with the number of simplices bounded through the degree of A. The main result of this presentation is, that if we reparametrize all the set A but its small part of a size $\delta > 0$, we can do much more: not only to "kill" all the derivatives, but to bound uniformly the *analytic complexity* of the pieces, while their number remains of order $log\ (\frac{1}{\delta})$. In contrast with the C^k-case, the number of pieces in an *analytic* reparametrization cannot be bounded through the degree only, and the above result is, essentially, sharp. Initial applications in Analytic Dynamics are provided, in particular, explicit bounds on the local volume growth in iterations of of analytic mappings. (Received March 03, 2006)