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**Avraham Goldstein\*** (avraham.goldstein.nyc@gmail.com), 76-19 168th Street, Flushing, NY 11366. *Plaques Inverse Limit of a Dynamical System - Dynamics, Signatures and Local Topology*. Preliminary report.

Signatures of points in Plaques Inverse Limit of a branched covering self-map of a Riemann surface were introduced by Cabrera, Cherif and Goldstein in "On the topology of the inverse limit of a branched covering over a Riemann surface", shown to be local invariants of P.I.L. and computed for the invariant lifts of super-attracting, attracting cycles, and certain parabolic cycles. All these signatures have a maximal element.

We show that the local topology of P.I.L. at irregular points differ, depending on the types of signatures at these points. Specifically, the local topology at an irregular point  $x$  has a property, that for any small neighborhood  $V$  of  $x$  there exists a point  $y \neq x$  in  $V$  such that the open set  $V - \{y\}$  consists of an uncountable number of path-connected components, if and only if some signature of  $x$  has no maximal element. Additionally, we discuss cases, in which some signature of the invariant lift of a parabolic cycle has no maximal element. Finally, we prove a stronger version of Mañé's Theorem, which asserts that all other irregular points, except the invariant lifts of super-attracting, attracting, and parabolic cycles, have a signature with no maximal element with respect to some recurrent critical point. (Received March 21, 2017)