1046-55-1008 **Edgar J Lobaton*** (lobaton@eecs.berkeley.edu), 1089 57th St Apt 2, Emeryville, CA 94608.
Recovering Topology of a Camera Networ Coverage. Preliminary report.

Camera networks are used for surveillance, monitoring and tracking. For the most part, localization information such as camera locations and other environmental factors (e.g. walls, rooms, and building layout) are known. But, how much of this information is really necessary to perform any of these tasks? The present work focuses on tracking and navigation tasks that do not require full localization information. In particular, we will discuss the recovery of topological information of a camera network coverage, captured in a Simplicial representation built from discrete observations, and used for tracking, identification of homotopic paths, and navigation. A simple algorithm for obtaining this discrete observations and building the Simplicial representation will demonstrate how these tasks can be performed without full localization information. This algorithm will prove to be particularly useful for ad-hoc camera networks with limited computational power and energy. (Received September 13, 2008)