1025-30-105   **David A Herron*** (`david.herron@math.uc.edu`), Department of Mathematical Science, University of Cincinnati, PO Box 210025, Cincinnati, OH 45221-0025, and **Hrant Hakobyn**, SUNY, Stony Brook, NY. *Euclidean QuasiConvexity.* Preliminary report.

A metric space is quasiconvex provided it is bilipschitz equivalent to a length space: each pair of points can be joined by a rectifiable path whose length is comparable to the distance between its endpoints.

We consider a closed set in Euclidean n-space and ask when is its complement quasiconvex. In dimension n=2, a complete description is available, at least for closed sets with finitely many components. In general, there are sufficient conditions that such a complement be quasiconvex; one such condition is that the set have zero (n-1)-dimensional Hausdorff measure.

We exhibit, for each dimension d in [n-1,n], a compact totally disconnected set with positive finite d-measure whose complement is quasiconvex. On the other hand, we also construct a compact totally disconnected set with non-zero (n-1)-measure whose complement fails to be quasiconvex. (Received January 17, 2007)