Some properties of equidistants.

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Let F be a closed set in Euclidean space. The projection of a point X on F is any point of F nearest to X. We denote by Fr a set of the points which are distant on a value r from F and call it an equidistant of F. We denote by Fr^+ a set of the points which are distant on a value no less than r from F and call it a superequidistant. We call a point $X \in F_r$ critical if it is contained in a convex hull of it projections on F.

Theorem. If Fr is a compact hypersurface without critical points, then it is δ - touched hypersurface for some δ, $0 < \delta < r$, and $(Fr^+)_a$ is smooth δ_1-touched hypersurface for every δ_1, where $0 < \delta_1 < a < \delta$.