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Quasiconformal maps and substantial boundary points.

Let D be a bounded Jordan domain in the complex plane. We say that a boundary point z of D is a substantial boundary point for the affine stretch $f_K(x + iy) = Kx + iy$ in D , where $K > 1$, if the maximal dilatation of f is at least K for every quasiconformal mapping f of $U \cap D$, for any neighborhood U of z , such that $f = f_K$ on $U \cap \partial D$. It is known that if D has a non-zero angle at z , then z is not a substantial boundary point.

We prove that if there is a sequence of cross cuts of D tending to z such that D is narrow in a certain technical sense in this sequence, then z is a substantial boundary point of D for the affine stretch. (Received January 08, 2007)