On character of points in the Higson corona of a metric space

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We prove that for an unbounded metric space X, the minimal character $m\chi(\check X)$ of a point of the Higson corona $\check X$ of X is equal to $\mathfrak u$ if X has asymptotically isolated balls and to $\max\{\mathfrak u,\mathfrak d\}$ otherwise. This implies that under $\mathfrak u<\mathfrak d$ a metric space X of bounded geometry is coarsely equivalent to the Cantor macro-cube $2^{<\IN}$ if and only if $\dim(\check X)=0$ and $m\chi(\check X)=\mathfrak d$. This contrasts with a result of Protasov saying that under CH the coronas of any two asymptotically zero-dimensional unbounded metric separable spaces are homeomorphic.

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