

fractal & Hausdorff dimension

The Hausdorff or fractal dimension d_f relates the mass $N \sim R^{d_f}$ of an object to its characteristic length, R .

For a dense object in d dimension, $N \sim R^d$ and $d_f = d$. An object is fractal if $d_f < d$. For an ideal polymer or random walk, $R^2 \sim N$ and $d_f = 1/2$. The inverse fractal dimension is often called “Flory exponent”: $\nu = 1/d_f$.