AN ANALOGUE OF KHINTCHINE'S THEOREM FOR SELF-CONFORMAL SETS

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Khintchine's theorem is a classical result from metric number theory which relates the Lebesgue measure of certain limsup sets with the convergence/divergence of naturally occurring volume sums. In this talk I will discuss a recent paper where I asked whether an analogous result holds for iterated function systems(IFS's). The main result of this paper shows that an analogue of Khintchine's theorem holds if our IFS consists of conformal mappings and satisfies the strong separation condition, or if it is a collection of similarities and satisfies the open set condition. The divergence condition we introduce incorporates the inhomogeneity present within the IFS. I will demonstrate via an example that such an approach is essential.