

ABSTRACT. We study random recursive constructions with finite “memory” in complete metric spaces and the Hausdorff dimension of the generated random fractals. With each such construction and any positive number β we associate a linear operator $V^{(\beta)}$ in a finite dimensional space. We prove that under some conditions on the random construction the Hausdorff dimension of the fractal coincides with the value of the parameter β for which the spectral radius of $V^{(\beta)}$ equals 1.