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**Ruojun Huang\*** (rh138@nyu.edu), 251 Mercer Street, New York, NY 10012. *Random walk on growing in time Internal DLA.*

We study a random walk independently evolving on a dynamically growing random cluster known as Internal Diffusion Limited Aggregation. The cluster is formed by successive attachment at the outer boundary by particles that are injected from the origin and diffuse. We are interested in recurrence versus transience of such a random walk, in an environment that is never in equilibrium. We show that on  $\mathbb{Z}^d$ ,  $d \geq 3$ , when the cluster is formed at a constant injection rate of particles, random walk is recurrent in the sense of infinite expected occupation time. Further, we establish a sharp criterion determining recurrence versus transience when the injection rate is inhomogeneous, thereby completing a partial result of Dembo, Sidoravicius and the speaker. Motivation and open questions will be provided. (Received August 09, 2019)