Lyapunov exponents for small aspect ratio Rayleigh-Benard convection JANET SCHEEL, California Institute of Technology, MICHAEL CROSS, California Institute of Technology, MARK PAUL, Virginia Tech — Positive Lyapunov exponents and their corresponding eigenvectors have been computed numerically for small aspect ratio, 3-D rotating Rayleigh-Benard convection cells with no-slip boundary conditions. The parameters are the same as those used by Ahlers and Behringer (PRL 40, 1978) in their seminal work on aperiodic time dependence in Rayleigh-Benard convection cells. Our work confirms that the dynamics in these cells truly is chaotic as defined by a positive Lyapunov exponent. The time evolution of the Lyapunov eigenvector in the chaotic regime will also be discussed.

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