1077-11-1915 **Avraham Bourla*** (avraham.bourla@trincoll.edu), Department of Mathematics, Trinity College, 300 Summit st., Hartford, CT 06106. *Recovering the sequence of approximation coefficients from a pair of successive pairs.*

Let $\{a_n\}_1^\infty$ be the sequence of digits for the regular continued fraction expansion of an irrational number r and let $\{\theta_n\}_0^\infty$ be its sequence of approximation coefficients (SAC) from Diophantine approximation. We will show that for all irrational numbers and $n \geq 1$, there is an integer valued function on two variables, whose value for both (θ_{n-1}, θ_n) and (θ_{n+1}, θ_n) is a_{n+1}. In tandem with a theorem due to Jurkat and Peyerimhoff, this will prove that there is a real valued function f on two variables such that $\theta_{n+1} = f(\theta_{n-1}, \theta_n)$ and $\theta_{n-1} = f(\theta_{n+1}, \theta_n)$, revealing elegant symmetrical structure. In particular, the entire SAC can be recovered from a single pair of successive terms. (Received September 21, 2011)