Orbit representations from matrices

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\textbf{Abstract}

Each Markov interval map $f$ naturally produces a transition $0$–$1$ matrix of interval type (in every row, the entries equal to $1$ should be consecutive). We show that any $0$–$1$ matrix $A$ can be transformed into an interval type matrix $A_I$, by a careful use of the state splitting. We then prove that $A_I$ can be realized as a transition matrix of an interval map $f_{A_I, \lambda_{A_I}}$ arising from the Perron–Frobenius eigenvalue $\lambda_{A_I}$ and eigenvector of $A_I$. Finally, we construct orbit representations associated with $A$ from those of $A_I$ arising from the dynamical system $([0, 1], f_{A_I, \lambda_{A_I}})$.

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