1163-37-583 **Tamara Kucherenko** (tkucherenko@ccny.cuny.edu), **Anthony Quas** (aquas@uvic.ca) and **Christian Wolf*** (cwolf@ccny.cuny.edu). *Multiple phase transitions on compact symbolic systems.*

Let $\phi : X \to \mathbb{R}$ be a continuous potential associated with a symbolic dynamical system $T : X \to X$ over a finite alphabet. Introducing a parameter $\beta > 0$ (interpreted as the inverse temperature) we study the regularity ofthe pressure function $\beta \mapsto P_{\text{top}}(\beta\phi)$ on an interval $[\alpha, \infty)$ with $\alpha > 0$. We say that ϕ has a phase transition at β_0 if the pressure function $P_{\text{top}}(\beta\phi)$ is not differentiable at β_0. This is equivalent to the condition that the potential $\beta_0\phi$ has two (ergodic) equilibrium states with distinct entropies. For any $\alpha > 0$ and any increasing sequence of real numbers (β_n) contained in $[\alpha, \infty)$, we construct a potential ϕ whose phase transitions in $[\alpha, \infty)$ occur precisely at the β_n's. In particular, we obtain a potential which has a countably infinite set of phase transitions. (Received September 10, 2020)