1016-37-11 **Anna Mummert*** (anna@math.psu.edu), McAllister Building, University Park, PA 16802. *A thermodynamic formalism for noncontinuous potentials.*

Let f be a continuous map of a compact metric space X and $\varphi : X \to \mathbb{R}$ not necessarily continuous on X. Assume that $\Lambda \subset X$ has a family of subsets $\{\Lambda_l\}_{l\geq 1}$ satisfying the following properties: (1) $\Lambda_l \subset \Lambda_{l+1}$ (2) $\cup_{l\geq 1}\Lambda_l = \Lambda$ (3) φ is continuous on the closure of each Λ_l.

We define the topological pressure of φ on Λ as $P_\Lambda(\varphi) = \sup_{l\geq 1} P_{\Lambda_i}(\varphi)$, where $P_{\Lambda_i}(\varphi)$ is well-defined as it is the topological pressure of a continuous function.

For this topological pressure we show a corresponding variational principle. We note that, as φ is not continuous, the class of measures in the variational principle is restricted.

We examine the question of existence and uniqueness of equilibrium measures when f admits a Young tower and $\varphi = -\log \mathrm{Jac}(f|_{E^u_x})$. (Received December 6, 2005)