1057-30-206 **Alexander Yu. Solynin*** (alex.solynin@ttu.edu), Department of Mathematics and Statistics, Broadway and Boston, Lubbock, TX 79409. *Choquet capacities, elliptic equations, and ordering of solutions.*

We will discuss *Choquet capacities* $C(E)$ generated by solutions of certain elliptic partial differential equations on a domain Ω. In particular, we will show that our set functions $C(E)$ satisfy the Choquet inequality $C(E_1 \cup E_2) + C(E_1 \cap E_2) \leq C(E_1) + C(E_2)$ for any two compact subsets E_1 and E_2 of Ω. Then using the so-called *ordering transformation* of sets, we will explain how the Choquet inequality can be generalized for systems containing more than two sets. (Received January 22, 2010)