1046-34-845 **Marat Akhmet*** (marat@metu.edu.tr), Department of Mathematics, Middle East Technical University, 06531 Ankara, Turkey. *Poisson stability and chaos of relay systems.*

Poisson stable trajectories give a strong evidence of the chaotic attractor [L. Shilnikov, Bifurcations and strange attractors. Proceedings of the International Congress of Mathematicians, Vol. III (Beijing, 2002), 349–372, Higher Ed. Press, Beijing, 2002.]. Lorenz system is the famous example. Fully developed existence of the trajectories for a class of relay systems will be discussed. An appropriate simulation result is provided. (Received September 12, 2008)