

Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-34-195 **S. G. Hristova*** (hristovas@denison.edu), Granville, OH 43023. *Impulsive Super Hybrid Differential Equations at Variable Times*. Preliminary report.

The talk deals with the hybrid system that arises in manufacturing processes, with steps, governed by differential equations, which depend on the output from the previous step of the process. This type of hybrid systems consists of "two-dimensional time" - a continuous part and a discrete part. The case when the process is instantaneously perturbed is studied. Impulses occur on a given surfaces, so the impulsive moments depend on the solution and they are variable. Additionally, each discrete part contains two types of impulses: those that are "inherited" from all previous discrete part steps, and those determined through new and independent impulse conditions. Therefore, in this double hybrid model, there is propagation of impulses: each discrete part step has at least as many impulses as the previous step, and possibly more. Some qualitative results are discussed for such kind of a system. (Received August 24, 2004)