

1145-93-2031      **Laura Munteanu\*** ([laura.munteanu@oneonta.edu](mailto:laura.munteanu@oneonta.edu)), State University of New York at Oneonta.  
*Nonlinear Control Systems as Collections of Vector Fields*. Preliminary report.

A classical control system can be seen as an ordinary differential equation containing a parameter. This parameter, called control, can be varied so as to induce diverse trajectories of the given system through its solutions. More precisely, from a fixed point or state, we could reach an entire set of other states by varying the control. Many physical processes can be modeled by non-linear rather than linear control systems. In this presentation, we will outline a few examples illustrating the possible structure of the so-called reachable sets for certain linear as well as non-linear control systems, and we will look at how non-linear control systems can be viewed as collections of vector fields on finite dimensional differentiable manifolds. (Received September 25, 2018)