1154-53-361 **Thomas A. Ivey***, 66 George St., Charleston, SC 29403. *Bäckund Transformations and Darboux Integrability, Revisited.* Preliminary report.

About a decade ago Jeanne Clelland and I published a paper concerning Bäcklund transformations between the wave equation and other hyperbolic Monge-Ampere systems $\mathcal{I}$ defined on 5-manifolds. We proved that if such a transformation exists, has one-dimensional fibers, and satisfies some mild genericity conditions, then the prolongation of $\mathcal{I}$ is Darboux-integrable. We also argued that, conversely, Darboux-integrability at the 2-jet level implies the existence of such a transformation; however, Anderson and Fels later showed that the equation $z_{xy} = \sqrt{(}1 - u_x^2)\sqrt{(}1 - u_y^2)/\sin z$ is a counterexample.

In this talk I'll discuss a generalization of the first argument – establishing Darboux integrability – to a broader class of decomposable systems, and I'll briefly analyze the problem with the second argument. This is joint work with Jeanne Clelland and Naghmana Tehseen. (Received September 02, 2019)