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Cynthia V Flores* (cynthia.flores@csuci.edu) and **Derek L Smith** (dls@math.ucsb.edu).

On the controllability and stabilization of the linearized Dispersion Generalized Benjamin-Ono equation on a periodic domain. Preliminary report.

In this talk, solutions of the linearized Dispersion Generalized Benjamin-Ono equation are studied

$$\partial_t u(x, t) + D^{1+a} u(x, t) = f(x, t) \tag{1}$$

for $0 < a < 1$, $x \in [0, 2\pi]$ and $t \geq 0$ where D^{1+a} denotes the homogeneous derivative. We impose that

$$\frac{\partial^k u}{\partial x^k}(0, t) = \frac{\partial^k u}{\partial x^k}(2\pi, t)$$

for $k = 0, 1$, and 2 so that the process is 2π -periodic in x , and additionally, it is assumed that the distributed control f is generated by a linear feedback law conserving the volume $\int_0^{2\pi} u(x, t) dx$. Included in the discussion are the related controllability and stabilizability preliminary results. (Received September 22, 2015)