1165-35-111 **Gavin Stewart*** (gss367@nyu.edu). *Long time behavior for the complex modified Korteweg-de Vries equation.* Preliminary report.

Consider the complex modified Korteweg-de Vries (mKdV) equation

$$\partial_t u + \partial_x^3 u = |u|^2 u_x$$
$$u(1) = u_*$$

where $\|\langle x \rangle u_*\|_{L^2} \leq \epsilon$. In the case when u is real, it is known that for ϵ sufficiently small solutions decay at the linear rate and have a certain asymptotic behavior. However, arguments in the literature require that the nonlinearity be a derivative, which makes them inapplicable to the equation above. In this talk, I will present work in progress on the long time behavior of solutions of the complex mKdV equation. A key ingredient in my argument is the use of a frequency space division based on the space-time resonant sets of the equation to control the growth of the weighted L^2 norm of the profile instead of the scaling vector field argument used in the real-valued case. (Received January 14, 2021)