

1125-35-2171

Casey Jao* (cjao@math.berkeley.edu). *Microlocal dispersive estimates and the energy-critical NLS on perturbations of \mathbf{R}^3 .*

It is well known that solutions to the linear Schrödinger equation in \mathbf{R}^d decay in time at a rate of $t^{-d/2}$. This is in general false on a curved background due to refocusing of geodesics. However, as shown by Burq, Gérard, and Tzvetkov, it holds microlocally provided one restricts to times less than a sufficiently small multiple of the semiclassical parameter, essentially stopping the geodesic flow before refocusing can occur. I will discuss long-time refinements of this estimate which exhibit weaker but still nontrivial decay. Such weak dispersive estimates play an essential role in the study of energy-critical NLS on manifolds. Time permitting, I will specifically discuss the quintic NLS on small perturbations of \mathbf{R}^3 . (Received September 19, 2016)