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*Well-posedness and dispersive decay of small data solutions for the Benjamin-Ono equation*

Our goal is to take a first step toward understanding the long time dynamics of solutions for the Benjamin-Ono equation. While this problem is known to be both completely integrable and globally well-posed in  $L^2$ , much less seems to be known concerning its long time dynamics. We present that for small localized data the solutions have (nearly) dispersive dynamics almost globally in time. An additional objective is to revisit the  $L^2$  theory for the Benjamin-Ono equation and provide a simpler, self-contained approach. This is joined work with Daniel Tataru.