

1145-35-1938      **Albert Ai\*** ([aai@math.berkeley.edu](mailto:aai@math.berkeley.edu)). *Low Regularity Solutions for Gravity Water Waves.*

We consider the local well-posedness of the Cauchy problem for the gravity water waves equations, which model the free interface between a fluid and air in the presence of gravity. It has been known that by using dispersive effects, one can lower the regularity threshold for well-posedness below that which is attainable by energy estimates alone. Using a paradifferential reduction of Alazard-Burq-Zuily and low regularity Strichartz estimates, we apply this idea to the well-posedness of the gravity water waves equations in arbitrary space dimension. Further, in two space dimensions, we discuss how one can apply local smoothing effects to further extend this result. (Received September 24, 2018)