

O. Maehlen

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The zero-dispersion limit for the Benjamin–Ono equation on the circle

Using the explicit formula of P. Gérard, we characterize the zero-dispersion limit for solutions of the Benjamin–Ono equation on the circle with bounded initial data. The result generalizes the work of L. Gassot, who focused on periodic bell-shaped data, and complements the work of Gérard and X. Chen who identified the zero-dispersion limit on the line. Here, as well as in the mentioned cases, the characterization agrees with the one first obtained by Miller–Xu for bell-shaped data on the line: The zero-dispersion limit is given as an alternating sum of the characteristics appearing in the multivalued solution of Burgers' equation.