

On the isospectral problem of the dispersionless Camassa–Holm equation

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April 29, 2012

We discuss direct and inverse spectral theory for the isospectral problem of the dispersionless Camassa–Holm equation, where the weight is allowed to be a finite signed measure. In particular, we prove that this weight is uniquely determined by the spectral data and solve the inverse spectral problem for the class of measures which are sign definite. Finally, we discuss applications to the long-time asymptotics of the dispersionless Camassa–Holm equation.