



On ringing effects near jump discontinuities for periodic solutions to dispersive partial differential equations

[Kenneth D. T.-R. McLaughlin](#), [Nigel J. E. Pitt](#)

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We consider weak solutions to dispersive partial differential equations with periodic boundary conditions and initial data with jump discontinuities. These are already known to be continuous at irrational times and piecewise constant at rational times; we show that as time approaches a rational value the solution exhibits a ringing effect, with the characteristic overshoot of fixed amplitude near the discontinuities. Furthermore this effect is the same whether the sequence of times follows rational or irrational values.

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