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Lehrstuhl für Analysis und Modellierung

**Lehrstuhl-Seminar  
Sommersemester  
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## **Validity of the Hyperbolic Whitham Modulation equations in Sobolev Spaces**

**16. Juli 2020 - 10:30**

**WebEx**

Abstract: In this talk I will discuss modulation in time and space of periodic wave trains, of the defocussing nonlinear Schrodinger equation, and show that it can be approximated by solutions of the Whitham modulation equations, in the hyperbolic case, on a natural time scale. The error estimates are based on the local well-posedness of Whitham equations in Sobolev spaces on the real line combined with the energy type estimates for the nonlinear Schrodinger equation. An essential part of the proof is the inclusion of higher-order corrections to Whitham theory, and concomitant higher-order energy estimates.