國立交通大學應用數學系
演講公告

主講人：Professor Peter Miller(University of Michigan)

講　題：Universal Wave Breaking in the Semiclassical Sine-Gordon
　　　　　Equation

時　間：109 年 2 月 26 日(星期三) 下午 14:00

地　點：(光復校區) 科學一館 223 室

Abstract

　　The sine-Gordon equation has slowly-modulated librational wave solutions that are approximated at leading-order by a Whitham averaging formalism. The Whitham modulation equations are an elliptic quasilinear system whose solutions develop singularities in finite time. We show that when the solution of the Whitham system develops a generic type of gradient catastrophe singularity, the solution of the sine-Gordon equation locally takes on a universal form, independent of initial data and described in terms of the real tritronquée solution of the Painlevé-I equation and a two-parameter family of exact solutions of sine-Gordon that represent space-time localized defects on an otherwise periodic background wave.　This is joint work with Bing-Ying Lu.

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