

# 國立交通大學應用數學系

## 學術演講公告

主講人：謝佳佑 博士 (香港中文大學數學系)

講 題：Singular Solutions to Some Semilinear Elliptic Equations:  
An Approach of Born-Infeld Approximation

時 間：108 年 12 月 10 日(星期二) 下午 14:00 –15:00

地 點：(光復校區) 科學一館 223 室

茶 會：當天下午 1:30 (科學一館 205 室)

### Abstract

We construct singular solutions to a semilinear elliptic equation with exponential nonlinearity on a bounded domain in  $\mathbb{R}^2$ . To show the existence of singular solutions, we introduce an inverse problem and utilize a Born-Infeld approximation scheme. Ruling out a possible occurrence of bubbling phenomenon, we show that as the Born-Infeld parameter tends to infinity, solutions of the inverse problem on a subdomain with finitely many holes can be used to approximate singular solutions to the original problem. Our work rigorously justifies the Born-Infeld-Higgs approximation to the abelian Maxwell-Higgs theory. This is a joint work with Yong Yu and Ho Man Tai (CUHK).

敬請公告 歡迎參加

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