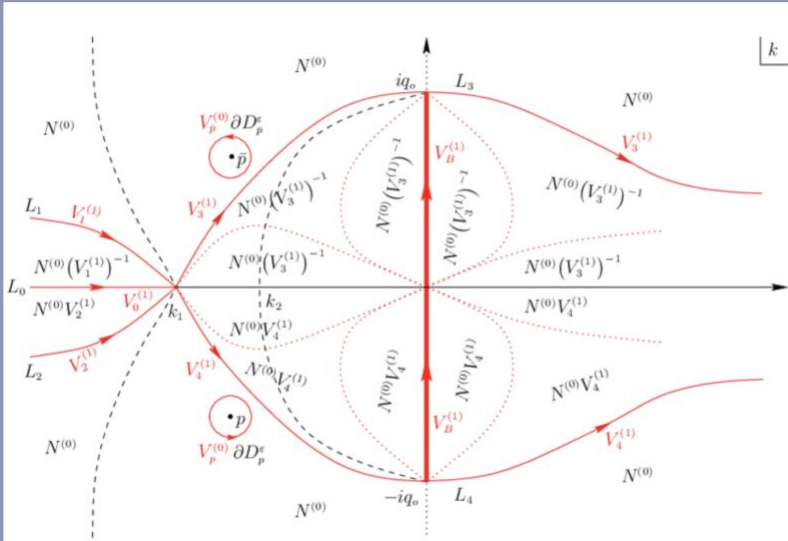


# Math Colloquium Series

DR. SITAI LI

UNIVERSITY OF MICHIGAN



DATE:

FEBRUARY 6, 2020

TIME:

12:30PM-1:30PM

(REFRESHMENTS AT 12:15PM)

LOCATION:

UNIVERSITY CENTER 122

## Maxwell-Bloch and Nonlinear Schrodinger Systems with Nonzero Backgrounds

**Abstract:** Integrable nonlinear partial differential equations possess a remarkably deep mathematical structure and exhibit a variety of fascinating phenomena. These equations have been extensively studied over the last fifty years. Understanding the properties of these equations, their solutions and structures often requires techniques from different areas of mathematics. In this talk, I will first introduce two specific integrable systems: Maxwell-Bloch system of equations (MBEs) and nonlinear Schrodinger (NLS) equation. Then, I will present my main results: (i) formulation of the inverse scattering transform (IST) for MBEs with nonzero boundary conditions; (ii) soliton interactions in NLS equation with both zero and nonzero boundary conditions; (iii) universal behavior of modulational instability in different nonlinear systems.

For More Information please contact the UCCS Math Department at  
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