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Department of Mathematics and Computer Science

Colloquium

On infinite periodic band matrices and the periodic Toda flow

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Abstract:

In this talk, we consider the equation $\dot{C} = [C^+, C]$, where C is an infinite periodic band matrix of period n, with lower bandwidth k and upper bandwidth k', subject to the condition that

$$1 \leq k, k' \leq n-1, k+k' < n.$$

We will show that this flow, which was introduced in 1979 by van Moerbeke and Mumford, and which we call the periodic Toda flow, is Liouville integrable. Through this result, we will also show that we can improve on the dictionary in the work of van Moerbeke and Mumford.

4 – 5pm, Wednesday, March 8, 2023

Room 204, Smith Hall