

# SCMS Seminar



## HAUSDORFF DIMENSION OF BAD SETS IN INHOMOGENEOUS DIOPHANTINE APPROXIMATION

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### Lecture

**Time:** 4:30-5:30 pm., Friday, Dec. 22, 2017

**Venue:** Room 2201, East Main Guanghua Tower, Handan Campus

**Abstract:** We will explain how to use homogeneous dynamics to Diophantine approximation. In particular, we are interested in badly approximable vectors in inhomogeneous Diophantine approximation. We will give a condition that ensures Hausdorff dimension of bad sets to be not full. This is a joint work with Uri Shapira and Nicolas de Saxce.

$$k_2 = hf(x_1 + \frac{1}{2}y + \frac{k_2}{2})$$
$$b_i - (\sum_{j=1}^{i-1} a_{ij}x_j^{(k)} + \sum_{j=i+1}^n a_{ij}x_j^{(k)})$$
$$\Delta y_i = \int_{x_i}^{x_{i+1}} \frac{a_{ij} y' dx}{b_i - (\sum_{j=1}^{i-1} a_{ij}x_j^{(k)} + \sum_{j=i+1}^n a_{ij}x_j^{(k)})}$$
$$\int_{x_k}^{x_{k+1}} f(x, y) dx = \int_{x_k}^{x_{k+1}} y' dx = y(x)$$
$$-\sqrt{(y_n + 0.5\tau k_1)^2 + (t_n + 0.5\tau)^2}$$