

**WABASH
EXTRAMURAL MODERN ANALYSIS
SEMINAR**

October 29, 2016

2:00 p.m.

at

Wabash College

in rooms 114 and 118 Baxter Hall

*Times given are Eastern Time,
which is currently local time for Central Indiana and Ohio.*

- 2:00–2:30** *Refreshments and conversation*
- 2:30–3:30** **Bounded Cohomology and Flat Bundles**
Guido Mislin, Ohio State University
- 3:30–4:00** *More refreshments and conversation*
- 4:00–5:00** **Ergodicity and recurrence for inner functions on the upper
half-plane**
Jiun-Chau Wang, University of Saskatchewan
- 5:00–...** *Refreshments and farewells*

The purpose of Wabash Seminar talks is to present surveys of interest to all analysts, including graduate students and scholars working in areas far from the speaker's specialty. Come and meet your fellow analysts, learn what's going on, and spread the word.

Next Meeting: TBA

For further information call

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Bounded Cohomology and Flat Bundles

Guido Mislin

For an n -dimensional vector bundle over an n -manifold M one defines its Euler number. In case of the tangent bundle, this number is equal to the Euler characteristic of M . Conditions on the bundle restrict the possible values of the Euler number. We will be looking at the case of flat bundles (bundles which are induced from the universal covering bundle by a homomorphism from the fundamental group to the structure group of the bundle). For flat vector bundles the absolute value of the Euler number is bounded in terms of the *simplicial volume* of M , a quantity which only depends on the topology of M . In case of surfaces, this bound corresponds to a classical result due to Milnor.

We will present some recent results on bounded cohomology of Lie groups, leading to universal bounds for more general characteristic numbers (joint work with Indira Chatterji and Christophe Pittet).

Ergodicity and recurrence for inner functions on the upper half-plane

Jiun-Chau Wang

In 1857 George Boole proved that the map $Tx = x - 1/x$ preserves Lebesgue measure on the real line. Later in the 1970s, the transformation T was shown to be ergodic and recurrent by viewing it as the boundary restriction of the inner function $F(z) = z - 1/z$ on the complex upper half-plane. In this talk we will present a noncommutative probability approach to the infinite ergodic theory of such inner functions, with an emphasis on Boole type transformations on the real line.