

# Colloquium

University of Notre Dame  
Department of Mathematics

Sergei Starchenko - University of Notre Dame

**Speaker:** Sergei Starchenko

University of Notre Dame

**Will give a lecture entitled**

A version of Elekes-Szabo Theorem for compact real analytic sets

**Date:** Wednesday, April 3, 2024

**Time:** 4:00 PM

**Location:** 129 Hayes-Healy Bldg



**Departmental Tea:** Tea in Room 257 (lounge in Hurley Hall) at 3:30 p.m.

**Zoom URL:** [notredame.zoom.us/j/99986867672?](https://notredame.zoom.us/j/99986867672?pwd=Z2NJRIZwL0dTR0Nxbk50NEIHK0dNdz09)  
pwd=Z2NJRIZwL0dTR0Nxbk50NEIHK0dNdz09

**Abstract:**

In this talk I present a generalization of the Elekes-Szabo theorem to sets definable in o-minimal structures, in particular to compact analytic sets. In dimension 3 we obtain: A compact analytic surface has maximal possible size of intersections with finite grids if and only if in some locality it is in coordinate-wise bijection with a plane. (A coordinate-wise transformation is a map  $F: \mathbb{R}^3 \rightarrow \mathbb{R}^3$  of the form  $F(x,y,z) = (f(x),g(y),h(z))$ .)