



**KURT GÖDEL RESEARCH CENTER FOR  
MATHEMATICAL LOGIC**

UNIVERSITÄT WIEN

1090 WIEN, WÄHRINGER STRASSE 25

**O.UNIV.-PROF. DR. SY-DAVID FRIEDMAN**



INVITATION

**VASSILIS GREGORIADES**  
(University of Turin, Italy)

**THE DYCK AND PREISS SEPARATION UNIFORMLY**

Abstract:

The typical example of a uniformity-type result in descriptive set theory is the Souslin-Kleene Theorem, which says that the separation property of the class of analytic sets can be witnessed by a recursive function in the codes. An important consequence of the latter is the extension of the result HYP is effectively bi-analytic, in all recursive Polish spaces.

In this talk we present the uniform version of two more separation theorems about analytic sets by Dyck and Preiss. The former deals with the monotone analytic subsets of the Cantor space, and the latter with the convex analytic subsets of  $\mathbb{R}^n$ . (A subset of the powerset of the naturals is monotone if it is closed upwards under inclusion.) We show that the separation can be realized by a recursive and a HYP function in the codes respectively. As in the case of the Souslin-Kleene Theorem, these results have the analogous constructive consequence. It follows for example, that every HYP convex subset of  $\mathbb{R}^n$  can be obtained from the class of HYP compact convex sets by taking HYP increasing unions and HYP intersections.

**THURSDAY, MARCH 16, 2017**

Tea at 3:30pm in the KGRC meeting room (room 104)

Talk at 4:00pm in the KGRC lecture room (room 101)

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JOSEPHINUM, 1090 WIEN, WÄHRINGER STRASSE 25



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**o.Univ.-Prof. Dr. Sy-David Friedman**