Research statement

Szymon Głąb
szymon_glab@yahoo.com
Institute of Mathematics
Technical University of Łódź, Poland

My research centers around applications of pure set theory and descriptive set theory in real analysis. In my doctoral thesis I study descriptive complexity of sets which appear naturally in real analysis. I show that set of strictly singular autohomeomorphisms of the unit interval is Π_1^1–complete, in particular non–Borel. I investigate descriptive complexity of compact subsets of real line with prescribed Lebesgue density and porosity, and set of all functions differentiable on co-countable sets in $C[0, 1]$. I am also interested in studying of properties of small sets in Polish spaces.