ILGWON SEO, McMaster University

O-minimality of almost regular multisummable germs

As a step toward addressing Dulac's problem, the main goal of my project is to show the o-minimality of an algebra containing multisummable functions and almost regular germs. A multisummable function can be expressed as a series of holomorphic functions at 0. Together with Patrick Speissegger, I constructed an algebra by replacing holomorphic functions with a.r. germs. However, since the asymptotic expansion of an almost regular germ is generally divergent, this algebra fails to satisfy the closure properties required for o-minimality. To overcome this difficulty, we introduce a refined algebra Q, obtained by selectively choosing well-behaved functions. In this follow-up to my spring talk, I will present what has changed over the summer and explain how the algebra Q can be used to prove o-minimality.