

MSRI–Evans Talk

Monday, 4:10–5:00pm, 60 Evans

Feb. 9 **János Kollár**, Princeton University

Which powers of holomorphic functions are integrable?

The aim of this lecture is to investigate the following, rather elementary, problem:

Question: Let $f(z_1, \dots, z_n)$ be a holomorphic function on an open set $U \subset C^n$. For which $s \in R$ is $|f|^{-s}$ locally integrable?

It is not hard to see that there is a largest value $s_0(f, p)$ such that $|f|^{-s}$ is integrable in a neighborhood of p for $s < s_0(f, p)$ but not integrable for $s > s_0(f, p)$. Our aim is to study this “critical value” $s_0(f, p)$. Subtle properties of these critical values are connected with Mori’s program (especially the termination of flips), with the existence of Kähler–Einstein metrics in the positive Ricci curvature case and with many other topics.