Recognizing $G/P$ by its varieties of minimal rational tangents

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Abstract

Let $G/P$ be a rational homogeneous space of Picard number 1 and let $X$ be a Fano manifold of Picard number 1. The question we are interested in is: if the variety of minimal rational tangents at a general point of $X$ is isomorphic to that of $G/P$, is $X$ biholomorphic to $G/P$? An affirmative answer was given for $G/P$ associated with a long root in the works of Mok and Hong-Hwang in 2008. The question has been open for the other $G/P$, i.e., symplectic Grassmannians and two cases of $F_4$-homogeneous spaces. In a recent joint-works with Qifeng Li, we settle the case of symplectic Grassmannians and the 15-dimensional $F_4$-homogeneous space. We report on these results and also discuss the remaining 20-dimensional $F_4$-homogeneous space.

Date: November 28, 2017 (Tuesday)
Time: 4:00 – 5:00pm
Venue: Room 210, Run Run Shaw Bldg., HKU

All are welcome