

THE UNIVERSITY



OF HONG KONG

*Institute of Mathematical Research*

*Department of Mathematics*

## **GEOMETRY SEMINAR**

# **Dynamical Mordell-Lang conjecture for the polydisk**

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### **Abstract**

If the intersection of an orbit of a finite endomorphism  $F$  of  $\Delta^d$  with a hyperbolic line  $L$  is an infinite set, then there exists  $k \in \mathbb{N}$  such that  $F^k(L) = L$ . It is a hyperbolic counterpart of the work of Ghioca-Tucker-Zieve in [Inv 08] and [ArXiv:08]. Besides many ideas derived from original papers of Ghioca-Tucker-Zieve, this work is based on Fatou-Remmert-Stein-Rischel [Bull.France 23] [Math.Z 60] [Math.Scand.64], Faltings [Inv 83], M. Baker [Angew 09], Wang [Thesis HKU 07] and a new hyperbolic version of Bilu-Tichy. We shall explain Ghioca-Tucker-Zieve's method together with those new features, especially the arguments on heights and on deriving hyperbolic Bilu-Tichy. Basic ideas for those two parts are simply specialization and Schwarz reflection principle respectively.

**Date:** August 18, 2010 (Wednesday)

**Time:** 4:00 - 5:00pm

**Place:** Room 210, Run Run Shaw Bldg., HKU

*All are welcome*