THE UNIVERSITY   **OF HONG KONG**

Institute of Mathematical Research
Department of Mathematics

Geometry Seminar

Preperiodic points of the Lattes family and unlikely intersection

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Abstract

Masser and Zannier showed that there are only finitely many parameters $t \in \mathbb{C}$ such that the points $P_t = (2, \sqrt{2(2-t)})$ and $Q_t = (3, \sqrt{6(3-t)})$ are both torsion on the Legendre elliptic curve $E_t = \{y^2 = x(x-1)(x-t)\}$. This statement is equivalent to some statement of the Lattès family. We study the dynamics of the Lattè family and give a dynamical and potential proof for this statement. Moreover, we get a little better result: there are only finitely many t such that P_t and Q_t are simultaneously small with respect to the Neron-Tate height. A key ingredient in the proof is the arithmetic equidistribution theorem on $\mathbb{P}^1$ of Baker-Rumely, Favre-Rivera-Letelier and Chambert-Loir.

Date:	June 13, 2014 (Friday)
Time:	2:30 – 3:30pm
Place:	Room 210, Run Run Shaw Bldg., HKU

All are welcome