

THE UNIVERSITY



OF HONG KONG

Institute of Mathematical Research
Department of Mathematics

Geometry Seminar

Singularities and Limit Functions in Iteration of Meromorphic Functions

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Abstract

Let $f(z)$ be a transcendental meromorphic function. In this talk, we shall investigate, using the method of hyperbolic metric, the relation between the forward orbit $P(f)$ of singularities of f^{-1} and the limit functions of iterates of f in its Fatou components. We shall show that for a wandering domain U , all the limit functions of $\{f^n|_U\}$ lie in the derived set of $P(f)$ and that if $f^{np}|_V \rightarrow q (n \rightarrow +\infty)$ for a Fatou component V , then either q is in the derived set of $S_p(f)$ or $f^p(q) = q$. As applications of the main theorem, some sufficient conditions of the non-existence of wandering domains and Baker domains will be given.

Date: May 13, 2004 (Thursday)

Time: 4:00 – 5:00pm

Place: Room 517, Meng Wah Complex

All are welcome