

THE UNIVERSITY



OF HONG KONG

*Institute of Mathematical Research
Department of Mathematics*

LECTURE SERIES

Pluricanonical Hodge Decomposition

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Abstract

The m -genus of a compact complex manifold is the complex dimension of the vector space of all holomorphic sections of the m -th tensor power of its canonical line bundle. The deformational invariance of the m -genus for any positive m is known to hold for compact complex algebraic manifolds. When m is 1, such a deformational invariance for all compact Kähler manifolds is just a direct consequence of the Hodge decomposition. The question naturally arises whether the deformational invariance of m -genus for m greater than 1 can also be understood in the context of some form of Hodge decomposition with the vector space of all holomorphic m -canonical sections as a summand. We discuss the results and the developments in the study of this problem by starting with the simplest case of compact Riemann surfaces.

Colloquium Lecture:	July 10, 2014 (Thursday) 4:00 – 5:00pm
Lecture 2:	July 17, 2014 (Thursday) 3:00 – 4:30pm
Lecture 3:	July 25, 2014 (Friday) 10:30am – 12:00noon

Room 210, Run Run Shaw Bldg., HKU

All are welcome