# Permutable entire functions and their Julia sets <br> BY TUEN WAI NG <br> Department of Mathematics, The Univesrsity of Hong Kong 


#### Abstract

In 1922-23, Julia and Fatou proved that any two rational functions $f$ and $g$ of degree at least two such that $f(g(z))=g(f(z))$, have the same Julia set. I.N. Baker then asked whether the result remains true for nonlinear entire functions. In this talk, we shall show that the answer to Baker's question is true for almost all nonlinear entire functions. The method we used depends on a result of Grauert on complex analytic equivalence relations and it is useful for solving functional equations. It actually allows us to find out all the entire functions $g$ which permute with a given $f$ which belongs to a very large class of entire functions.


