Abstract. The workshop *Multiplier Ideal Sheaves in Algebraic and Complex Geometry*, organised by Stefan Kebekus (Freiburg), Mihai Paun (Nancy), Georg Schumacher (Marburg) and Yum-Tong Siu (Cambridge MA) was held April 12th – April 18th, 2009. Since the previous Oberwolfach conference in 2004, there have been important new developments and results, both in the analytic and algebraic area, e.g. in the field of the extension of $L^2$-holomorphic functions, the solution of the ACC conjecture, log-canonical rings, the Kähler-Ricci flow, Seshadri constants and the analogues of multiplier ideals in positive characteristic.

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Introduction by the Organisers

The workshop *Multiplier Ideal Sheaves in Algebraic and Complex Geometry*, organised by Stefan Kebekus (Freiburg), Mihai Paun (Nancy), Georg Schumacher (Marburg) and Yum-Tong Siu (Cambridge MA) was held April 12th – April 18th, 2009. Since the previous Oberwolfach conference in 2004, there have been important new developments and results, both in the analytic and algebraic area. This meeting included several leaders in the field as well as many young researchers.

The title of the workshop stands for phenomena and methods, closely related to both the analytic and the algebraic area. The aim of the workshop was to present recent important results with particular emphasis on topics linking different areas, as well as to discuss open problems.
The original approach involving the theory of partial differential equations and subelliptic estimates was addressed in several contributions, including existence theorems for $L^2$-holomorphic functions and applications of multiplier ideal sheaves to solutions of the Ricci-flow and the Monge-Ampère equation. Further areas included the study of Seshadri numbers, canonical models, as well as log canonical varieties and their canonical rings. The solution of the ACC conjecture for log canonical thresholds was presented. Furthermore, the analogues of multiplier ideals in positive characteristic were discussed.