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Partielle Differentialgleichungen

Organised by
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Reiner Schätzle (Tübingen)
Neil Trudinger (Canberra)

July 24th – July 30th, 2005

ABSTRACT. The workshop dealt with partial differential equations in geometry and technical applications. The main topics were the combination of non-linear partial differential equations and geometric measure theory, conformal invariance and the Willmore functional, and regularity of free boundaries.

Mathematics Subject Classification (2000): 35 J 60, 35 J 35, 58 J 05, 53 A 30, 49 Q 15.

Introduction by the Organisers

The workshop *Partial differential equations*, organised by Tom Ilmanen (ETH Zürich), Reiner Schätzle (Universität Tübingen) and Neil Trudinger (Australian National University Canberra) was held July 24–30, 2005. This meeting was well attended by 46 participants, including 6 females, with broad geographic representation. The program consisted of 15 talks and 9 shorter contributions and left sufficient time for discussions.

New results combining partial differential equations and geometric problems were presented in the area of minimal surfaces, free boundaries and singular limits, for example the construction of branched minimal surfaces, the regularity of free boundaries in the wake of the monotonicity formula of Weiss and a proof of a conjecture of De Giorgi.

A major part of the leading experts of partial differential equations with conformal invariance attended the workshop. Here new results were presented in conformal geometry, for the Yamabe problem, the Paneitz operator and the Willmore functional.

