

Partial Differential Equations

The research in Partial Differential Equations has made significant progress in the past thirty months, with substantial improvement, both qualitative and quantitative, on its publication record, in the conclusion of doctoral dissertations, in the implementation and maturation of research and graduate education in emerging institutions, and in the intensification of the scientific exchange between researchers from Brazilian institutions and their colleagues from abroad. The creation of the Millenium Institute has played a crucial role in this progress by making it possible to develop a global strategic planning of scientific activities including meetings, Scientific Initiation and Post-Doctoral programs and the support to emerging institutions in terms of bibliographic and computational infrastructure, as well as the effective participation of their researchers in national events and scientific cooperation. Among the broad research lines in Partial Differential Equations, we highlight linear equations, nonlinear evolution equations and nonlinear elliptic equations as areas of particularly well developed activity, with large research production and with consolidated and geographically well-distributed groups. In the framework of the Millenium Institute, 5 workshops were organized in partial differential equations, several complex variables, non-linear differential equations, elliptic equations and finally in differential equations: theory, computation and applications. There was also a symposium on scattering and spectral theory. Besides those, several schools were organized, one of them having the participation of researchers from Brazil, Chile and Argentina. It is to be noticed that one of the workshops as well as a colloquium, took place in Centers in Development, jointly the Federal Universities of Campina Grande and Paraíba and in the Federal University of Pará. As can be seen from the individual reports by organizers of the Millenium Institute activities, there has been substantial improvement of the scientific output in the field of Partial Differential Equations by Brazilian researchers as stated above. This increased productivity has been felt both in the established and in the emerging institutions. We attribute this improvement to the talent of the young scientists coming out of the graduate programs in the area in Brazil, to the intensification of the scientific exchange of Brazilian researchers from different institutions among themselves and with foreign distinguished colleagues and to a remarkable broadened horizon of planning for scientific activities, brought about by the Millenium Institute.