Alejandro Bugacov

Alejandro Bugacov received his Ph.D. degree in physics from USC in 1995 and his M.S. in physics from the Universidad Nacional de Rosario (Argentina) in 1989. Until recently, he was involved in several the DARPA funded projects (ATTEND, CAMERA and GeoWorlds) dealing with complex resource allocation problems and computational complexity issues in large-scale planning and scheduling problems. During Fall of 2004, he lectured a graduate level course at USC's Petroleum Engineering Department in "Soft-computing methods for reservoir characterization and management". Before joining ISI, he worked as a Research Associate in the Laboratory for Molecular Robotics at USC, where he conducted theoretical and numerical simulations and experimental research in the fabrication of nanostructures by direct manipulation of colloidal gold particles with a Scanning Probe Microscope. During his doctorate research he worked in theoretical atomic physics and is the author of 14 journal publications in the fields of Nanomanipulation with an Atomic Force Microscope and Multiphoton Ionization of atoms by very strong pulses. His thesis topic was the ionization of highly excited Rydberg atoms by a half-cycle pulse and the implementation of numerical analysis methods for the integration of the time-dependent Schrödinger equation in a massively parallel computer (CM5). His current research interests are in computational physics, oilfields reservoir simulations and management, MEMS and large-scale constraint satisfaction and optimization problems.