Istituto di MAtematica Applicata e Tecnologie Informatiche (CNR)
Dipartimento di Matematica "Felice Casorati"
via Ferrata,1 – 27100 Pavia (Italia)

Seminario di Matematica Applicata

Martedì 10 Dicembre 2002 a Pavia, nella Sala Conferenze dell'I.M.A.T.I.-C.N.R. (ex I.A.N.), si terranno le conferenze:

– alle ore 15:00 –
Prof. Peter Monk
(University of Delaware)

Forward and Inverse Electromagnetic Scattering.

Abstract. When electromagnetic waves impinge on an object, they are scattered and the electromagnetic field differs from the background field in the absence of the object. One the one hand, for the forward scattering problem, we are interested to compute the effects of the object (the scatterer) on the known background or incident field. This problem is well-posed and linear. I shall present a finite element method for approximating this problem in the frequency domain and discuss some of the issues that influence the choice of algorithm. On the other hand, acoustic or electromagnetic waves are often used to try to determine properties of an inaccessible scatterer (for example radar). This problem, in which the incident and resulting scattered field are known, but the scatterer is unknown, is an inverse scattering problem. Such problems are ill-posed and non-linear However, I shall present an algorithm called the Linear sampling Method for the problem and show some computational results.

– alle ore 16:30 (precise) –
Prof. Nobuyuki Kenmochi
(Chiba University)

Mathematical analysis of the pulling method for crystal growth.

Abstract. The pulling method due to Czochralski is well-known as a practical way for the production of single crystals from mert substances. But the theoretical analysis of its mathematical model seems still incomplete. In this talk we propose a more realistic mathematical model for the pulling method and discuss the solvability. Our model is a system of nonlinear parabolic equations formulated in a time-dependent domain.

La S.V. è cordialmente invitata.

☕ Tra le due conferenze verrà organizzato un coffee break. ☕