ISTITUTO DI MATEMATICA APPLICATA E TECNOLOGIE INFORMATICHE (CNR)
DIPARTIMENTO DI MATEMATICA "FELICE CASORATI"
via Ferrata,1 – 27100 Pavia (Italia)

Seminario di Matematica Applicata

Martedì 18 Febbraio alle ore 16 a Pavia, nella Sala Conferenze dell'IMATI-CNR (ex IAN), il

Prof. Stefano Serra Capizzano
(Università dell'Insubria - sede di Como)

terrà la conferenza:

Spectral analysis of discretized Partial Differential Equations: Szegö-style theorems, extremal behaviour and applications

Abstract. We consider the Finite Difference discretization of an elliptic second order PDE as $-\sum_{i,j=1}^{d} \frac{\partial}{\partial x_i}\left(a_{i,j}(x)\frac{\partial}{\partial x_j}u(x)\right) = b(x)$ over a bounded domain and we study the singular value distribution (the eigenvalue distribution in the Hermitian case) in terms of weighted multidimensional Szegő formulas involving the data of the problem (the matrix $A(x) = (a_{i,j}(x))$ and the domain) and the used formulas for the derivatives $\frac{\partial}{\partial x_j}$, $j = 1, \ldots, d$. Some applications of this theoretic analysis and of the extremal spectral behaviour to the numerical solution of the corresponding PDEs linear systems are briefly discussed.

La S.V. è cordialmente invitata.

☕ Dopo la conferenza sarà organizzato un breve rinfresco ☕