

## THE 1990 SEPTEMBER MEETING

Donal O'Regan

The 1990 September meeting was hosted by Dublin City University. This very successful meeting was organised by Alastair Wood.

Professor J. Mawhin (Louvain) opened the conference on Thursday 6 September with a talk entitled "Topological Results for Periodic Solutions of ODEs". He described via continuation methods how the existence question for period solutions of ODEs could be approached.

Dr Donal O'Regan followed with "Some Old and Some New Results for Certain Classes of BVPs for ODEs" in which a brief description of recent results for systems of BVPs was presented.

The morning session concluded with Professor N. Everitt (Birmingham) who spoke on "Recent Developments in Computer Programmes for eigenvalues of the Sturm-Liouville problem". Regular and singular (limit circle type only) Sturm-Liouville problems were discussed and also a brief discussion was presented of the computer programme SLEIGN 1 for computing eigenvalues.

The afternoon session began with Mr N. Steele's (Coventry) talk "An Introduction to Neural Networks". A description of the learning algorithm was presented and computer displays of his ideas were also given.

Next Dr T Murphy (TCD) spoke on "Cubic Art". He described how cubic splines could be presented via affine geometry (with Besier curves) to secondary school teachers.

The final lecture of the afternoon session "Semi-homomorphisms of Groups/Rings" was given by Dr M Leeney (UCC). He gave a brief account of how semi-homomorphisms of division rings occur in projective geometry. Recent results on semi-homomorphisms of rings were presented.

Professor F. Holland (UCC) began the morning session on Friday 7 September with a talk entitled "Hankel Operators between Weighted Sequence Spaces". He introduced his subject with a description of Hankel operators between sequence spaces and then recent results for weighted sequence spaces were presented.

Next, Professor T. J. Laffey (UCD) spoke on "A review of Unilarity Similarity of Matrices". He gave a short description of the general problem, i.e. given two  $n \times n$  matrices, how can one decide "in a nice way", if there exists a unitary matrix  $U$  transforming one of the given matrices into the other via similarity? Results for the cases  $n = 2$  and  $3$  were discussed.

After coffee Dr C Budd (Bristol) spoke on "Coronas in Non-linear Electrostatics". He began with a description of the electric fields in the vicinity of a high voltage "coronating" electrode. Mathematical models were given and then a brief account of the steady state problem was presented.

The conference concluded with Professor M. Berry's talk "The Stokes Phenomenon in Wave Asymptotics." He gave a historical introduction on how "Stokes phenomena" came about. Recent developments in the subject were also included.

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